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Original Articles

DIET IN TYPHOID FEVER *

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The conclusions which I have reached concerning the food requirements of the typhoid fever patient are based on studies on the protein metabolism of the disease which have been carried out in Bellevue Hospital and the Department of Experimental Pathology of Cornell University, in collaboration with Dr. P. A. Shaffer, during the last two years.

I believe that the solution of the essential problems of the typhoid-fever diet will be found in the correct answers to two questions:

I. Shall the typhoid fever patient be given enough food to meet his energy requirements?

II. How much food may be considered necessary to fulfill these requirements?

It is obvious that the digestibility and general suitability of the various foods can not be ignored, and these will be referred to later.

I. SHALL THE TYPHOID FEVER PATIENT BE GIVEN ENOUGH FOOD TO MEET HIS ENERGY REQUIREMENTS?

Brief reference to the history of typhoid diets will assist us in finding the answer to this question.

Starvation was the accepted practice for centuries in fevers of all kinds, and included deprivation of water. Graves[1] (1835) convinced himself that, for want of food, the ill effects of starvation were added to the ravages of the disease and recommended a diet which at that time was considered revolutionary. The diet consisted of carbohydrate-water made from toast-crumbs, meat-broths and jellies. It is difficult to estimate the caloric value of Graves' diet, since exact quantities are not mentioned, but at the most liberal reckoning it furnished not more than 300 calories in 24 hours—the equivalent of about 10 ounces of milk. Graves' belief that patients were benefited by this meager diet was shared by the great Trousseau and other eminent men of his time. The next advance in the feeding of typhoid patients was due, according to Nichols,[2] to the teaching of the late Austin Flint. Flint popularized the milk diet (about 1870). The usual quantity of milk taken by a typhoid patient in 24 hours—2 quarts—furnishes about 1,400 calories. The milk diet remained unchallenged until 1892, when Peabody's[3] paper, questioning its suitability, was published. Since 1892 there has grown up a school of practitioners who advocate liberal diets. Among them may be mentioned Shattuck,[4] Barrs,[5] Bushuyev,[6] Fitz,[7] Mueller,[8] Manges,[9] Kinnicutt[10] and LeFevre.[11] Bushuyev is the only one of these authors who has mentioned the quantities of the various foods to be given, and, therefore, the caloric values of these diets are difficult to estimate. Bushuyev's diet furnishes approximately 2,000 calories a day.

Thus, in each of these three diet-periods, there has been an increase in the energy value of the food recommended—an increase of 1,100 calories a day from Graves to Flint and a further increase of 600 calories from Flint to Bushuyev. With each addition to the diet the statement has been made that the patients have been benefited. With respect to each addition, the profession as a whole has been perhaps too conservative.

Since the chief objections which have been raised to the liberal diets relate rather to the physical state of the food than to the amount of energy they furnish, no attempt will be made at this time to answer them.

The history of diets in typhoid fever, then, clearly indicates a steady, but very slow, tendency to increase the amount of food allowed to the patients. Only exceptionally to-day do we find physicians, once they have used the higher caloric diets, advocating a return to the older methods, and as a rule their arguments are based on questions of digestibility rather than on the energy value of the foods. McCrae[12] has expressed the opinion that more harm may result from overfeeding than from underfeeding, but he is evidently referring to the possibility of setting up digestive disturbances. A distinction must be made between properly nourishing and improperly feeding a patient.

Turning from the history of the typhoid diets and the claims which have been made for them, we may inquire whether there is evidence that definite harm may come to a patient through partial starvation. It is well known that partial starvation lowers the resisting power of healthy persons, and there is reason to believe that immunity to infective diseases is not so readily acquired when patients are undernourished. Healthy laboratory animals develop a better immune serum than those which are not robust. Ewing[13] believes that many of the clinical and pathologic phenomena in severe cases of typhoid fever are directly attributable to an autoin-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Clinical Medicine, New Sydenham Society, 1884, i, 136.
2. Diet in Typhoid Fever, Fiske Fund Prize Dissertation, Providence, 1907.
3. Diet in Typhoid Fever, Med. Rec., 1892, xlii, 620.
4. THE JOURNAL A. M. A., 1897, xxix, 51.
5. Brit. Med. Jour., 1897, i, 125.
6. Progressive Med., 1899, i, 328.
7. Boston Med. and Surg. Jour., 1899, cxli, 509, 526.
8. Therap. d. Gegenw., 1904, vi, 23.
9. Med. Rec., 1900, lvii, 1.
10. Boston Med. and Surg. Jour., 1906, clv, 1.
11. Med. News, 1904, lxxxiv, 11.
12. Modern Med., 1907, article on "Typhoid Fever," p. 211.
13. Proc. Path. Soc., Philadelphia, 1905.

toxication resulting from the excessive destruction of body tissues. Furthermore, Ewing and Wolf[14] state, in a recent study of the urinary nitrogen in typhoid fever, that "the most obvious conclusion of this study is the inadequacy of the diet used in these cases and of that generally employed in typhoid fever."

There is, therefore, strong experimental and clinical evidence in favor of giving typhoid patients sufficient food to meet their demands for energy.

II. HOW MUCH FOOD MAY BE CONSIDERED NECESSARY TO FULFILL THESE REQUIREMENTS?

In answering this question I shall consider, first, the energy value of the food. The relative proportions of protein, fat and carbohydrate to be employed will be referred to later.

One of the chief characteristics of typhoid fever, as we know it, is emaciation (Fig. 1). Losses of 25 pounds during the course of cases of even moderate severity are not uncommon, and as much as 50 pounds may be lost by patients during prolonged, severe attacks. If these losses concerned only fat and water, they would probably not be serious, but they involve muscle and other tissues as well. Losses of from 15 to 20 gm. of nitrogen a day, representing from ½ to ¾ pound of muscle, are not unusual. Scarcely any one would deny that these losses should be prevented if possible, provided the means taken for their prevention is not more dangerous than the losses themselves. The hunger of many patients during the course of the disease and of all patients during convalescence is probably Nature's protest against the practice of partial starvation. Patients who are well enough complain of it, those who are too ill to complain probably have even greater need for food.

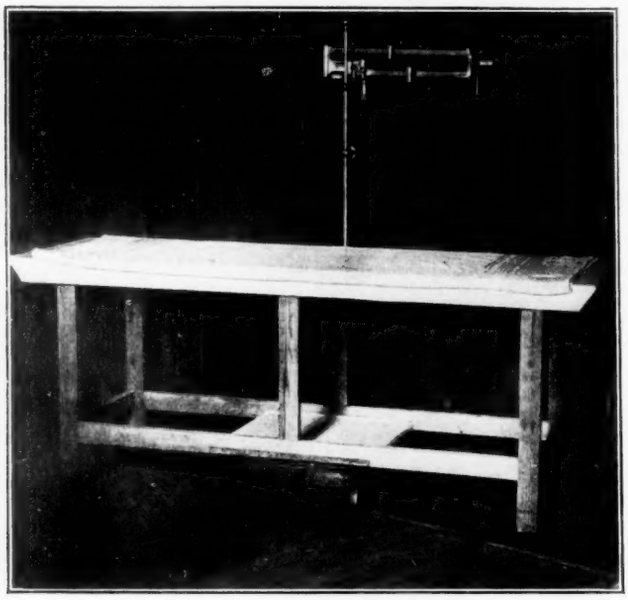

Fig. 1.—Apparatus for weighing bed patients constructed by hospital carpenter. The height of the table when placed on scales corresponds with that of the bed. The legs of table which just clear the floor prevent tilting.

The loss of weight in typhoid fever has been attributed to two causes: to the temperature and to so-called toxic destruction.

The Temperature.—The belief is common, even among the laity, that fever burns up tissues. Fritz Voit[15] and Linser and Schmid[16] have shown experimentally both in animals and man that pyrexia does increase metabolism. There is, therefore, a substantial basis for the common belief.

Toxic Destruction.—In addition to the febrile loss of body substances, there is a further increase in metabolism in the course of infective diseases which is due to the action of bacterial toxins. This is the so-called toxic destruction. The manner in which the toxins act is not definitely known.

Shaffer and I have found in our cases[17] that the losses due to both of these causes can be prevented by a high caloric carbohydrate diet. As no diet hitherto proposed for typhoid fever has furnished sufficient energy for the metabolic exchanges of the patient, we have concluded that the most potent factor in the losses of the disease is partial starvation.

We may calculate the minimum energy requirement of the typhoid patient as follows: A normal man at ordinary rest requires about 33 calories per kilo of body weight each day. According to Krehl,[18] the average typhoid patient requires a 25 per cent. addition to this in order to meet the febrile increase in heat production. This gives 41 calories per kilo of body weight per day or approximately 3,000 calories for a man weighing 150 pounds. It must be emphasized that this is the calculated minimum requirement.

If this calculation is approximately correct, then a patient weighing 150 pounds, taking 2 quarts of milk a day, is getting only 50 per cent. of his minimum requirement, and a patient of the same weight on a "liberal diet" is getting only 75 per cent. of this requirement. As a matter of fact, the discrepancies are even greater, since we found that the optimum requirement varied in different patients and at different stages of the disease, but was always greater than the calculated minimum. Our best results were obtained when the diets furnished from 60 to 80 calories per kilo per day, or 4,000 to 5,500 calories. In one case we reached 100 calories per kilo or 6,000 calories a day.

We have studied patients on a strict milk diet—2 quarts a day—and found that they lost from 5 to 12 gm. of nitrogen. These losses would cease, or at least be greatly reduced, when the energy value of the diet was raised. Forty-six patients altogether have been on our diet, with only one death. This was a case of ambulatory typhoid; the patient's pulse was alarmingly feeble on admission to the hospital, and he died a week later from what appeared to be acute dilatation of the heart. (I feel that this case might, with fairness, have been excluded from the total.) Many of the 46 patients suffered from very severe forms of typhoid fever. For example, the temperature ranged from 103 to 105 F. in one case and lasted 47 days, with a relapse of 27 days' duration. Some of the patients were kept almost in nitrogen equilibrium throughout the disease. It was not unusual for patients to weigh as much or even more when they were allowed to get up (usually about the fourteenth day of convalescence) as when they were taken ill. In one instance, the patient actually gained 2 pounds during a sharp relapse of 10 days' duration. In all instances, the patients appeared brighter and stronger and better able to fight the disease. The percentage of relapses was slightly lower than in another division of the hospital where the usual diets were employed. I do

14. To appear in Arch. Int. Med.

15. Sitzungsb. d. Gesellsch. f. Morph. u. Physiol. in München, 1895, xi, 120.
16. Arch. f. klin. Med., 1904, lxxix, 514.
17. To appear in Arch. Int. Med.
18. Principles of Clinical Pathology, Hewlett translation, Philadelphia, 1905.

not feel disposed to make any statement as yet regarding the course and rapidity of convalescence. All of the patients left the hospital in excellent condition. Some of them I have been able to follow, and the impression I received was that convalescence progressed rapidly. But it is difficult to judge of this unless the patient can be seen frequently, which is manifestly impossible in the case of hospital patients.

Since the calculated minimum requirement of 3,000 calories diminishes but does not prevent protein loss, I would answer the second question by saying that a patient of 150 pounds' weight should be given food equivalent to 4,000 calories a day, but that the greater the energy value of his food, provided his digestive organs can handle it, the greater will be the sparing of protein and other body substances.

Diet.—The diet we used consisted, in the main, of milk, cream, milk-sugar and eggs. In addition, we allowed small slices of stale bread or toast, with as much butter as the patient wished. The daily quantities of these articles of food were about 1½ quarts of milk, from 1 to 2 pints of cream, from ½ to 1⅔ pounds of milk-sugar and from 3 to 6 eggs. It will be necessary to say a few words about each of these articles.

Fig. 2.—W. G. Blood culture positive. Very severe. Temperature 103-105 F. Duration of fever 47 days. Relapse of 27 day's duration. Ill for 3 weeks before admission. Said he had lost 15 lbs. Weight on admission, 151 lbs.; at end of first period, 140 lbs.; at beginning of relapse 144 lbs.; at end of relapse 140 lbs.; at first day up 154 lbs.; on discharge, 174 lbs. Picture was taken before patient was allowed out of bed.

Fig. 3.—J. C. Blood culture positive. Severe. Temperature 101-105 F. Duration of fever 21 days. Weight, 12th day, 60½ lbs. (2 days after admission); 16th day, 58 lbs.; 18th day, 59½ lbs.; 22d day, 59 lbs.; 26th day, 58 lbs.; 28th day, 60 lbs. Picture was taken before patient was allowed out of bed.

Milk: I am convinced after much experience with it that milk, in moderate quantity, is not an undesirable constituent of the typhoid diet. When the quantity is excessive, it may unquestionably produce harm, but the argument that it forms an excellent culture medium for the typhoid bacillus in the intestine has been exploded by the investigations which have shown that typhoid fever is a bacillemia. Milk in the quantity mentioned has not produced tympanites in our cases. Occasionally milk curds have appeared in the stools and then the quantity of milk has been diminished or it was peptonized. A good average milk will furnish 740 calories to the quart.

Cream: Though cream furnishes a large amount of energy, it is not advisable, according to our present knowledge, to give more than one-third of the total calories of the diet in the form of fat. Fat in the food, if absorbed, will protect an equivalent amount of fat in the body. Fat protects protein also, but not so efficiently as does carbohydrate. Other objections to cream in large amounts are its tendency to upset the stomach and to produce diarrhea. Patients usually can take a pint of cream a day without difficulty. We have given as much as 42 ounces. In only one instance has the cream disagreed. This patient developed diarrhea when the quantity reached a quart a day. The diarrhea stopped immediately when the cream was withdrawn. The cream supplied at Bellevue Hospital contains from 25 to 30 per cent. of fat and furnishes 1,300 calories to the pint.

Milk-sugar: Carbohydrate protects body protein better than any other foodstuff. For this reason a large proportion of the energy of our diet is supplied in that form. Starches can not be used in quantity because of their bulk and the consequent tax on the digestive organs. Therefore, it became necessary to select one of the sugars. We chose milk-sugar because it is not very sweet and not so likely to pall on the taste as other sugars, and because it does not so readily produce digestive disturbances. We have not found that it exhibited the laxative properties which have been ascribed to it; in fact, patients taking it often suffered from the constipation which is so common in typhoid fever.

The objections which we have found to milk-sugar are: some patients complain that it is too sweet; in some instances it produced nausea and vomiting, but more often vomiting without nausea, the stomach contents

being simply regurgitated. When vomiting occurs, the milk-sugar should be stopped. As a rule, however, its administration may be resumed in smaller quantities after several days and the quantity then be gradually increased. In a few instances the milk-sugar has caused moderate tympanites. We have not had a patient who could not be educated to take it in sufficient amount to materially raise the caloric value of the diet. The method of giving the milk-sugar will be discussed later. Milk-sugar furnishes 4 calories for each gram, or 120 per ounce.

Eggs: While it has not been determined definitely how much nitrogen a typhoid patient requires in 24 hours, our results indicate that the optimum amount lies between 12 and 16 gm. One and one-half quarts of milk and a pint of cream furnish 11 gm. of nitrogen and we made up the deficit with eggs. A two-ounce egg supplies 1+ gm. nitrogen.

We chose eggs because they are easily digested and readily obtained. Meat and home-made meat juice are

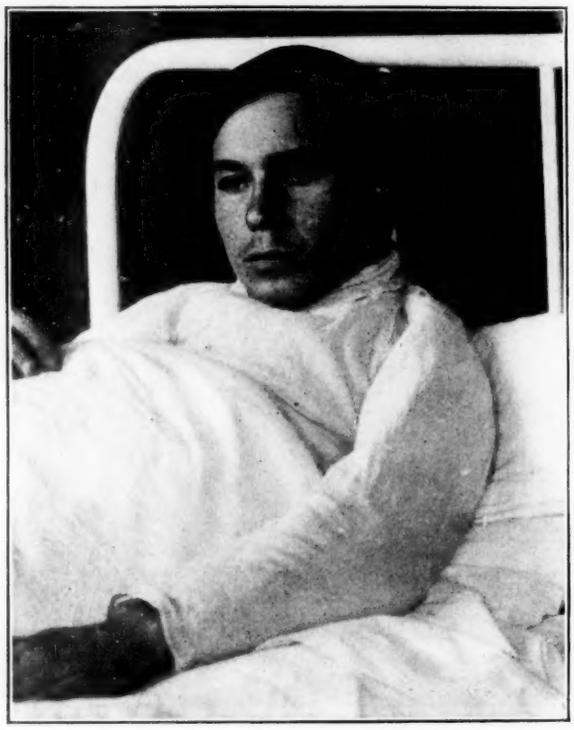

Fig. 4.—P. Z. Blood culture positive. Moderately severe. Temperature 101-103.8 F. Duration of fever 34 days. Weight 6th day, 129 lbs.; 10th day, 132 lbs.; 15th day, 136 lbs.; 17th day, 135 lbs.. 21st day, 133 lbs.; 24th day, 132 lbs.; 27th day, 132 lbs.; 35th day, 130 lbs Picture was taken before patient was allowed out of bed.

more likely to cause digestive disturbances. I have specified "home-made" meat juice because the consensus among scientists is that commercial meat preparations possess very little food value.[19]

It is important that the protein content of the typhoid diet be kept as low as is consistent with the nitrogen demands of the patient. In addition to digestive disturbances, the injudicious administration of meat may seriously disorder metabolism. It is well known that meat may cause the *febris carnis*. Ewing and Wolf[14] have recently found evidence in the urinary nitrogen to indicate that this "meat-fever" is due to the inability of the patient to digest and metabolize properly some alien proteins. They noted also in their cases this very important fact, that the *febris carnis* was soon followed by albuminuria, which, they suggest, may be the starting point of nephritis. Therefore, the caution may be repeated, to keep the protein content of the typhoid diet low during the disease and to allow meat sparingly early in convalescence.

Some Practical Considerations.—The diet which I have outlined is a difficult one to give to patients, on the whole rather more difficult than milk. Intelligent and reasonable persons, however, take it readily when the objects of the diet are explained to them. In other instances, patients are not told that the milk differs from what they have been accustomed to taking. The greatest difficulty has been experienced with adolescents who refused to take the diet because patients near them were allowed other food. When I have been convinced that the reason for not taking it was sheer stubbornness, I have insisted on carrying out the order. When I have even suspected that the diet was disagreeing with the patient, I have modified or stopped it, but always have cautiously resumed it (Figs. 2 and 3).

The food has been given at two-hour intervals, except that patients have not been awakened at night. The cream has usually been added to the milk, in the proportion of 2 ounces cream to 6 ounces milk, though a palatable ice-cream may be made with cream and milk-sugar. The milk-sugar should be given in small quantities at first—a tablespoonful to the glass of milk—and gradually increased to 4 tablespoonfuls. Many patients will take 2 ounces of cream, 6 ounces of milk and 2 ounces of milk-sugar several times a day, but this is a rich combination. At other times the milk-sugar may be given in tea, coffee, or cocoa, or it may be made with an egg into soft or baked custard. A milk-sugar lemonade may be given once or twice a day. If the water and sugar are boiled for two minutes before the lemon juice is added, 4 ounces of milk-sugar may be put into 8 ounces of lemonade. If the lemonade is not sweet enough, a tablespoonful of cane-sugar may be added. The eggs may be given soft boiled, soft poached or shaken up in milk, with or without whiskey.

While I believe that the foods mentioned must form the basis of the ideal diet for typhoid fever, much remains to be done in working out details. The greater the variety and the more palatable the dishes presented to the patient, the more content will he be to adhere to the prescribed diet. We have not yet been able to devote much time to the selection of variety in foods and dishes, but this is one of the questions which soon will engage our attention.

CONCLUSIONS

1. The practice of partial starvation, at present followed in the treatment of typhoid fever, is highly detrimental to the patient's welfare.

2. It is not only desirable but necessary that the typhoid patient be given sufficient food to cover his energy expenditures.

3. The amount of food required for this purpose will vary with different patients, but may be estimated approximately on the basis of 40 calories per kilogram of body weight per day.

ABSTRACT OF DISCUSSION

DR. MAX EINHORN, New York: The principles contained in the paper were recognized as far back as Graves, but they were not carried out as by Dr. Coleman. Since the days of Hippocrates it has been customary to subject these patients with fever to starvation diet, giving only water and barley-water, and under this rest treatment the patients felt quite comfortable; this method of treatment was carried out up to the time

19. Bull. No. 114, Bureau of Chemistry.

of Graves, who began to feed his typhiod patients with milk. The Hippocratic principle of rest was correct in caring for patients with diseases which run a short course, or last but a short time. Take an adult, with pneumonia, for instance, who is in good condition, the disease will last but five, six or seven days, the loss of a little flesh is not going to do him any harm; in starvation treatment may be carried out. The only important point that should be borne in mind and not forgotten is that these patients should have plenty of water. Individuals may go without food for a short time, but they can not stand the loss of water for even five, six or seven days. They can stand twenty days, loss of food, provided they are given plenty of water. But if we extend this principle a little further to patients with typhoid fever we then begin to see harm in the system. Typhoid fever lasts two, four, five or six weeks, and if we try to extend that principle the organism loses too much and irreparable consequences result to the system caused by the great loss of flesh. For that reason Graves believed that these patients should not be starved; he believed that they should receive nourishment and that one of the best substances for this was milk. Since then milk has been given to patients with typhoid fever, except perhaps when some fanatics give the starvation treatment. Twenty-five years ago, when I was house physician in a hospital, patients with typhoid fever were given a diet consisting particularly of milk, broths and raw eggs. Ten ounces every two hours were given, and also plenty of water and lemonade. With that diet, although we could not keep up the weight, we did prevent some loss. We gave occasionally a soft diet and farinaceous foods. What is new in Dr. Coleman's report is that he has succeeded in checking this loss of weight during the typhoid fever period. That has not been done before. During that period the organism requires more and more calories to replace the loss caused by the increased oxidation; the patient requires forty instead of twenty-five or twenty-six calories. Dr. Coleman has succeeded and we must follow his example and feed patients suffering with typhoid fever.

DR. THOMAS A. CLAYTOR, Washington, D. C.: For five or six years I have been feeding my typhoid fever patients along the lines advised by Dr. Shattuck and I agree with Dr. Coleman in his statement that when a physician has once fed these patients he will never be likely to return to the starvation diet. I believe that typhoid fever patients are more likely to recover when fed than when starved. They are far more contented. One of the most trying experiences with which these patients have to contend is hunger. When fed they are comparatively happy, they are much stronger, they convalesce more rapidly. Instead of being reduced to skin and bones they get up in good physical condition and are able to return to work much earlier, which, to the working man, is a very important thing. I certainly have not seen any more instances of hemorrhage or of perforation among the patients liberally fed than in those on liquid diet. I feel convinced that within the next ten years liberal feeding will become the rule rather than the exception in the treatment of typhoid.

DR. ARTHUR K. STONE, Boston: In a series of over fifty typhoid patients treated by me last summer at the Massachusetts General Hospital the diet used was much more mixed than that used by Dr. Coleman and was the diet suggested a number of years ago by F. C. Shattuck. It represented about 2,000 calories and my patients did as well as did Dr. Coleman's; there was only one death in the series. On the whole, the patients behaved very well on that diet and lost but little weight, but I debated whether it would not be wiser to add sugar of milk or in other ways to increase the caloric value of the diet; but as they were doing so well I concluded that this would not be necessary. However, to make sure, I invited Professor Follin to see these patients with me, requesting him to suggest whether it would be wise to increase the caloric value of the diet. He said he saw no reason why I should change from the diet I had been using. Practically no drugs were used in the treatment of these cases and the baths were light sponges.

DR. A. JACOBI, New York: Dr. Coleman is to be congratulated on his results, which, with that diet, I should not expect. I am greatly astonished at the good results he obtained. His diet was milk and, I hope, good milk. He has been very fortunate and I have not the slightest doubt the patients did very well; but what he told us certainly does not agree with what we know. It looks almost impossible to expect a healthy person, far less one with typhoid fever, to digest as much food as his patients did. I have never seen more disorders of digestion with indicanuria, acetone and diacetic acid in the urine than in patients who consumed a great deal of fat in that shape. Moreover, his patients taking so much fat took, at the same time, much milk undiluted and unmixed; my patients could not take it without becoming ill. I know that few children will stand an exclusively milk diet very long. It is true that patients will stand a great deal, but we should not contribute to their suffering. I wish to state that it is impossible for an average intestine to digest an unmixed cream to that extent. We cannot go into the physiology of digestion at this time, but I know that both adults and children, healthy or diseased, will bear milk that is diluted with cereal better, particularly in fevers in which the gastric secretions are lower than before the individuals were taken ill. In typhoid fever I would rather furnish the patients with 2,500 calories than 3,000, 4,000 or 5,000. It seems to me that Dr. Coleman, in his good wishes for the patient, has gone too far. Yet he says he has lost but one patient, and I think that other conditions in the hospital must have been extremely favorable and the patients well cared for. I congratulate him on his results, but I wish to give warning that we should be very careful in fat feeding to the extent that he has proposed to us. If a cereal is mixed with the milk, it will be more digestible. For many years I have not given pure milk in typhoid fever; I always mix it with rice-water or barley-water or other cereals or gelatin. I may not agree with Dr. Coleman's views, but I cannot gainsay his results, which are almost unprecedented. What I have said, however, is intended as a warning only.

DR. JAMES M. ANDERS, Philadelphia: I think it is a significant fact that general practitioners no longer pursue a starvation diet in the treatment of typhoid. Certain dietetic principles should be kept in mind in connection with the management of typhoid fever, and this remark applies to other infections as well. First of all, we should consider the proteid substances and recollect that the energy they represent is not all utilized by the system. For example, too much proteid food favors putrefaction in the intestinal tract, and with this there is brought about increased gravity of the case, especially in the direction of local symptoms. On the other hand, we should recollect that the energy represented by carbohydrates and fats is entirely utilizable within the system; therefore, we should give a certain amount of carbohydrates and fat to typhoid patients. This is what Dr. Jacobi has just hinted at in connection with the giving of milk. It should be remembered that one object of the dietetic treatment is the preservation of the tissues of the body and the prevention of emaciation which would otherwise occur. Fats, however, will not do this, but the carbohydrates will do it. Some of Dr. Coleman's success in maintaining the bodily weight of his patients so well may have arisen from the use of carbohydrates which were easily digested, and particularly the milk sugar which he recommended. It seems to me that his main suggestions are excellent ones and could be profitably followed by the general profession. The preservation of tissues, however, can only be accompanied by the use of carbohydrates.

DR. JAMES B. WALKER, Philadelphia: I have been very much interested in Dr. Coleman's paper because I have feared that increase in feeding of typhoid-fever patients may go too far to the other extreme. I believe that Dr. Coleman's results are thoroughly honest and true, but I fear, with Dr. Jacobi, who is always right, to give as much cream to a typhoid patient as Dr. Coleman has done. One article of diet which I think should not be given is starch. Starches are digested in the small intestine largely, as in the absence of chewing, insalivation is almost *nil*. Those who advocate a crust of bread or toast or other starchy food make a mistake in that they throw work on a part of the bowel that is not prepared to do it. I have found calves'-foot jelly—freshly prepared from the calves' feet and not made from the gelatin of the shops too

often containing the clippings from tanneries—an appetizing and digestible addition to the typhoid diet. I should like to add this to Dr. Coleman's list. I have given as much as one pint daily. As gelatin is believed to be antehemorrhagic, it may help to avert this dangerous complication. I want to advise against the use of starches for what seems to me good physiologic reasons, to advocate the use of calves'-foot jelly as an addition to the diet, and to protest against too varied and liberal feeding of patients affected with typhoid fever.

DR. D. L. PARKER, Detroit: The tendency to more liberal feeding in typhoid is establishing itself rapidly, and it seems to me that the principle that underlies the whole scheme is the return to the mode of living which is natural to the patient, so far as his condition will permit. Certain articles of diet must be eliminated, such as starches, which are digested in the small intestine, as Dr. Walker stated. One of the most important things to remember is that the natural diet contains salt, and, as a rule, the diet given to patients with typhoid fever contains very little salt. For a number of years it has been my practice to see that these patients receive as much salt at least as on an ordinary diet. Another important thing is to have sufficient time between the feedings. It has been found in the forced feeding of tuberculous patients, for instance, that the taking of food at intervals of four or five hours is very much better for these patients than if the meals are closer together. No person here in this room would think of taking food every two hours. I think the giving of food should be at longer intervals. Sufficient time should be given for the digestion of one meal before another is given.

DR. WOODS HUTCHINSON, New York: Nothing illustrates the progress of medicine better than the treatment of typhoid fever. Over sixty years ago Graves of Dublin chose as his epitaph "He fed fevers." Prior to this, blankets were placed over these patients, they were given very little food; even with high temperatures they were not allowed much water and no fresh air; the windows were kept closed; cold water to drink was regarded as deadly; and only lukewarm slops were permitted; in fact, the patients suffered almost as much from what was done for them as they did from the disease. Six years ago I began to use a liberal diet in my cases of typhoid fever, and the results have been the same as Dr. Coleman's. I had not the courage to carry it so far as Dr. Coleman has done, but the patients were given an abundance of tender meat, broths, jellies, crackers, toast, ice-cream, etc., and the results were excellent, not only as to keeping up the weight and strength of the patients, but also in preventing that condition of collapse after the fever subsided and the violent convalescent appetites which hitherto had craved such things as corned beef, beans and cold slaw. The patients made more rapid recoveries, had fewer complications and the results as a whole were very good. We think too much of the risk to the damaged intestine from liberal feeding in this disease, and regard typhoid fever as an intestinal disease too exclusively. Typhoid is a general disease, and, as has been shown, those patients who have been fed liberally, instead of suffering more from putrefactive changes in the intestines and tympany, have less of these changes, and fewer complications than those who are underfed. We are coming to see that many of the later symptoms that occur in the disease are due not so much to the actual toxic products of the bacilli as to the poisons generated from the broken-down tissues of the patient. Many of the symptoms occurring late in typhoid fever and are not so much to the disease itself as to the mistaken method of treatment, among which starvation ranks high. There is a risk in withholding food as well as in giving it.

DR. WARREN COLEMAN, New York: I did not foresee the nature of the questions which have been asked me or I should have requested more time of the chairman for my paper. One cannot deal adequately with such a subject as diet in typhoid fever in ten minutes. For lack of time I cannot answer all the questions that have been raised in the discussion. I feel, however, that I must attempt to reply to Dr. Jacobi.

The first thing I would say, and say emphatically, is that I did not experiment with patients in a way that was not thoroughly justifiable. Every increase made in the amount of milk-sugar was carefully controlled by observation in the hospital and by examinations in the laboratory of experimental pathology. Every increase made in the amount of fat was controlled in the same fashion. When there was reason even to suspect that the food was not agreeing with a patient, that particular article of food was stopped or diminished in quantity. I think that Dr. Jacobi perhaps has gained a wrong impression with regard to the amount of cream given. The usual quantity was one pint; sometimes as much as a quart; and in one or two instance even more. I did not observe any digestive or intestinal disturbances in any patient who was fed on this relatively large amount of cream except once; diarrhea occurred in that instance. The cream was stopped and at once the diarrhea ceased. Cream was not given again to this patient. The stools of all the patients were watched very carefully. There was no evidence that the cream was not, for the most part, utilized.

I am convinced that the principal question regarding the typhoid diet is whether it is desirable to let a patient live on his own tissues when it is possible to protect his tissues by giving him enough food. I have not yet worked out all the details of the diet. It has been estimated that gelatin may replace protein to the extent of one-fifth of the daily need of nitrogen. I started out to determine whether by giving a patient a sufficient number of calories to cover his expenditures, I could protect the body tissues. This was accomplished. In future I shall work in part on more practical problems, such as the varieties of food which may be given and the proper ways to prepare them. I did not follow the plan of giving large amounts of water, but was guided chiefly by the desires of the patients.

The patients are weighed on a long table, which, when placed on the platform of the scales, corresponds with the height of the bed. The weight is obtained without more disturbance to the patient than moving him from one side of the bed to the other.

INTRADURAL TUMOR OF THE MID-DORSAL CORD

OPERATION: COMPLETE RECOVERY OF SENSATION AND PARTIAL RESTORATION OF MOTION *

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CHICAGO

The era of spinal tumor surgery began in 1887 when Gowers[1] correctly diagnosed and Horsley successfully removed a tumor from the mid-dorsal cord. The operation was followed by almost complete recovery of sensation and motion. Since the publication of this remarkable case, in 1888, neurologists and surgeons have vied with each other in their efforts to improve the neurologic and surgical technic of the diagnosis and surgery of spinal tumor.

Although many patients have been rescued from early graves and others have been restored to perfect health from a state of invalidism, yet the total number of complete and partial recoveries is not so large as to make the report of a single case superfluous. The diagnosis in some instances is extremely easy and certain, while in others it can never reach beyond a probability. The difficulties in diagnosis have been sufficiently set forth in the instructive article by von Malaisé,[2] the complete monograph of Bruns,[3] the lucid reports of F.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Gowers and Horsley: Med.-Chir. Tr., 1888, p. 407.
2. Von Malaisé: Zur Differentialdiagnose der extra- und intramedullären Tumoren, Deutsch. Arch. f. klin. Med., 1904, lxxx, 143.
3. Bruns: Die Geschwülste des Nervensystems, 1907.

Schultze,[4] Oppenheim,[5] Fedor Krause,[6] and a number of American and English observers.

In my remarks at the conclusion of the following case report I shall briefly allude to the literature bearing on cases of spinal tumor in which operation has been performed.

REPORT OF CASE

Patient.—B. F., a working girl, aged 23, was first seen at the request of Dr. A. Goldspohn on Dec. 17, 1906.

Family History.—The parents were living and well; the grandparents on the mother's side died of old age; on the father's side they lived to middle age; their death was due to causes other than tuberculosis, malignancy, or vascular accident. An only brother and a sister were healthy. The family was remarkably free from functional and organic nervous disease.

Personal History.—The patient was born in normal labor and during infancy and early childhood had been free from serious disease. With the exception of an attack of typhoid at 12, measles and pertussis at 13, her health had been good until the beginning of the present illness. Her menses were regular, habits correct; there was no trauma or evidence of venereal infection.

Onset and Course of Disease.—Early in 1906 (January or February) the patient began to experience attacks of pain in the right hypochondriac region, which subsequently became more or less persistent. Occasionally the pains radiated into the epigastrium and produced a sensation of nausea, accompanied with eructations. It was the latter circumstance which first induced her to seek medical assistance. For some time she was treated for dyspepsia and neuralgia. Later an osteopath was consulted who endeavored to reduce a supposed displaced vertebra. In spite of all treatment, however, the symptoms continued to progress. The pains, which were at first almost entirely confined to the right half of the body, soon began to invade the left side, and in less than two months had nearly encircled the trunk at a height of one or two finger-breadths below the nipples. Though there was considerable variation in the intensity of the pains, they were never entirely absent. The upper portion of the trunk, the face and upper extremities were at no time the seat of sensory disorder, but several weeks after the beginning of the disease, fatigue and numbness were complained of in the lower extremities, and these sensations had a tendency to become more or less constant. On Sept. 23, 1908, after having retired for the night, the patient awoke feeling numb and stiff in the left leg from the knee downward. When she stepped out of bed to ascertain if she could still walk, the discovery was made that the left leg dragged and was partially paralyzed. There was considerable improvement in this limb on the following day, but the right leg had meanwhile become similarly affected; the latter grew rapidly worse and within three days was paretic. One week after these motor disturbances a feeling of tightness appeared about the waist and all sensation was abolished below the umbilical line. The sphincters were somewhat affected. The patient could then still walk without support, but was obliged to take rather small steps, as the feet seemed glued to the floor. At this period of the progress of the case she entered a hospital where she received vigorous antispecific treatment for about ten weeks. It was while under such treatment, about three weeks after the first motor symptoms had appeared, that the left and, soon afterward, the right leg became completely paralyzed. With the paraplegia there appeared more marked muscular twitchings and jerkings, which had for some time previously been the cause of considerable discomfort. In addition there were burning sensations in the paralyzed parts. The bladder and rectum subsequently became paralyzed. Her condition continuing to grow worse, the relatives caused a transfer to the Evangelical Deaconess' Hospital, where she became a patient of Dr. Goldspohn, who kindly referred the case to me for an examination. This was made on Dec. 16, 1906, and the following notes taken:

"*Examination.*—The patient, a well-developed girl, weighing about 150 pounds, of average height, occupies a recumbent posture and answers questions intelligently. But for the occasional demonstrations of pain caused by recurrent muscular spasms in the lower extremities, she gives one the impression of perfect health. Examination reveals normal findings in heart, lungs and abdominal viscera; the pulse is soft, regular and 75 beats per minute. Blood and urine normal. Pupils are equal, respond to light and in accommodation. Vision is unimpaired and eyegrounds appear normal. Glandular enlargements or evidences of neoplasm can not be discovered on her body.

"Motion: Eyes, face, neck and upper extremities are not involved; in marked contrast with these organs are the parts below the nipple line; here everything seems lifeless. The abdominal muscles are paretic and there is a condition of "lead-pipe" rigidity in the spastic lower extremities. From time to time the legs are seen to draw up and slowly to relax; voluntary control over the muscles is completely lost. The sphincters are distinctly paretic. The bladder empties itself periodically without the patient's knowledge. The bowels are absolutely constipated; several enemas are usually required to cause a partial evacuation.

"Reflexes: Normal in eyes, face and upper extremities. Abdominal reflexes are absent. The patellar and ankle-jerks are pathologically exaggerated; there is distinct bilateral rectus and ankle clonus. Babinski, Oppenheim and Gordon signs are promptly obtained.

"Sensation: 1. Tactile sensation is abolished up to a point which corresponds on Seiffer's charts to the space midway between the fifth and sixth dorsal segments on the right and to about the sixth segment on the left side anteriorly (Fig. 1). Posteriorly tactile sensation is lost up to about a line indicating the sixth dorsal segment on the right and to about one-half segment below this on the left side (Fig. 2).

"2. In a small strip below the upper limit of tactile anesthesia pain and temperature sense are still preserved (areas shaded lightly in Figs. 1 and 2).

"3. There is a somewhat larger area below the one last mentioned in which the pain sense is still preserved, while other sensory qualities are lost (circles in Figs. 1 and 2). Sensation seems to have suffered first and most in tactile conduction, then the temperature qualities appear to have yielded and last of all the pain sense has succumbed."

Diagnosis.—A history of unilateral pain gradually becoming bilateral, followed by motor paralysis of first one lower extremity, then of the other, with sphincter and sensory paralysis added, presented the classical symptom-complex of spinal tumor. The negative findings above the line of beginning anesthesia certainly excluded diffuse cerebrospinal disease. The relatively slow evolution of symptoms was against the diagnosis of acute transverse myelitis and in favor of slow compression of the cord by tumor. Syphilis and tuberculosis had still to be considered. But there were no stigmata of congenital or acquired lues and no evidence of tuberculosis anywhere on the patient's body. Neither was there a history of trauma or of infection. Having decided that there was a tumor of the cord, the next task was to localize it. This was comparatively easy. Sensory disturbances of any kind being found opposite a line midway between the fifth and sixth dorsal segments, the upper end of the neoplasm was probably situated opposite the spine of the third dorsal vertebra.

In the determination whether the tumor was extradural, intradural or medullary in character, I was influenced by the following considerations:

1. There were no neoplastic formations anywhere in the body; there was no deformity of, or tenderness in the vertebræ. The pains were, in the beginning at least, not agonizing, constant or of long duration. These negative findings spoke strongly against the existence of an extradural tumor.

2. The early presence of root irritation (pain) and at the same time the absence of cord symptoms make the diagnosis of intradural tumor at least improbable; for in such tumors the rule is for cord symptoms to appear early and for pain to come late.

My diagnosis was: Spinal tumor, probably intradural and situated at or about the spine of the third dorsal vertebra.

Immediate operation was advised.

4. Schultze, F.: Zur Diagnose der Operabilität der Hirn- und Rückenmarkstumoren und Operationserfolge bei denselben, Mitt. a.
5. Oppenheim: Beiträge zur Diagnostik und Therapie der Geschwülste im Bereich des centralen Nervensystems, 1907.
6. Krause, Fedor: Zur Kenntniss der Rückenmarkslähmungen, Arch. f. klin. Chir., 1907, lxxxiv, 583.

My colleague, Dr. Goldspohn, concurred in the diagnosis and was ready to operate, when for some unknown reason the patient's friends moved her to Wesley Hospital and entered her there as a ward patient. While at this hospital she was assigned to Dr. S. C. Plummer, the surgeon on service, who kindly referred the case to me for a neurologic opinion. After a re-examination, finding that no material change had occurred in her condition, I again concluded that a laminectomy was indicated. Dr. S. C. Plummer performed the operation on Jan. 4, 1907. He has kindly permitted me to abstract the following notes from his surgical report of the case before the Chicago Surgical Society, May 8, 1908:

Operation.—Patient was placed in the semiprone position on the left side. Ether anesthesia was used. The incision was made in the median line of the back, beginning just below the seventh cervical vertebra and extending downward to the seventh dorsal spine. The muscles were cut away from the sides of the spinous processes from the first to the sixth dorsal vertebræ on the left side. Several vessels were clamped and ligated, and a hot laparotomy sponge was packed into the wound, while on the right side the muscles were separated in a similar manner. Hemorrhage having been checked, the vertebral grooves were now cleared with a chisel by using the spinous processes as a fulcrum and pushing the tissues away from the laminæ. The spinous process of the fifth dorsal vertebra was now cut off with a bone-cutting forceps, and the ligamentum subflavum between it and the fourth dorsal vertebra severed with a knife. A special laminectomy forceps was used to cut away part of the laminæ of the fourth dorsal vertebra and the remainder was removed with the rongeur forceps. The dura, which now lay exposed from the lower border of the first to the upper border of the sixth vertebra, appeared normal in color; nothing abnormal could be felt on palpation. Pulsation seemed normal, but it was stronger in the upper third than in the lower two-thirds. This extensive exposure of the dura is explained by the circumstance that, having uncovered three cord segments and finding the dura seemingly normal, we believed an error in localization had been made. It was therefore decided to snip off another spine. When consequently the fifth vertebral spine had been removed and the dura still appeared normal, it was thought best to open it and search for the tumor. The patient's head was now somewhat lowered and the dura opened in the median line. Opposite the third dorsal spine a tumor was found lying between the membranes and the cord posteriorly and somewhat to the right. Using the handle of the knife this was easily delivered and the small pedicle broken off. While its exact attachment could not be definitely ascertained, it appeared to spring from the inner surface of the dura. The anesthetist noticed that the pulse, which up to this time had been but little above the normal, suddenly became very fast and difficult to count. The dura was now closed with a continuous suture and the muscles brought together with interrupted catgut sutures, leaving a space for a gauze drain down to the dura at the upper and lower extremities of the wound. The skin was closed with silkworm-gut sutures, a secondary suture being used at each end of the drain. In forty-eight hours one gauze drain was removed and in seventy-two hours the remaining one, secondary sutures being tied after removal of the drains. Aseptic healing throughout.

Fig. 1.

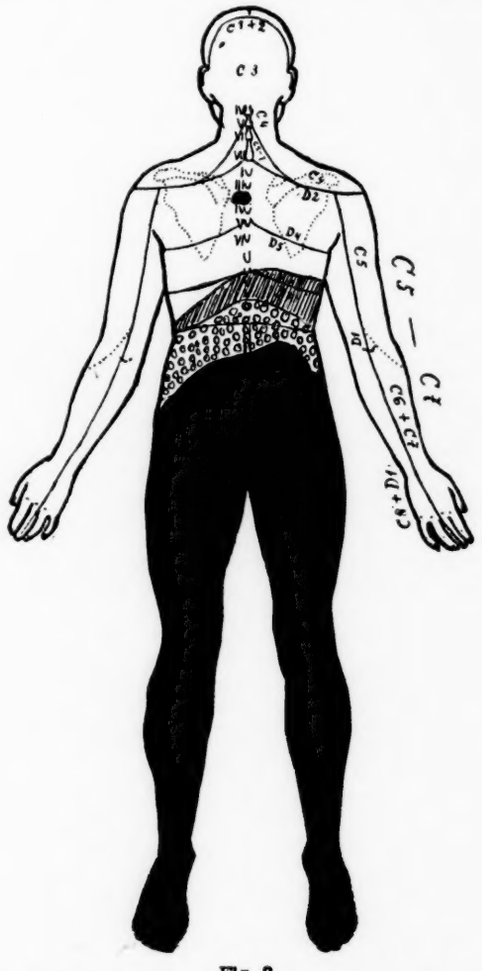

Fig. 2.

Figs. 1 and 2.—In both figures, the black space signifies total loss of all qualities of sensation; the circles indicate loss of thermal and tactile sensation; the shading denotes mere loss of tactile sensation. In Figure 2 (the back view), the heavy dot shows the highest border of the tumor.

Pathologic Report.—When examined macroscopically the tumor appeared reddish-yellow, was rather soft in consistency and measured 3 cm. in length, 0.8 cm. in its widest diameter and 0.2 cm. in thickness. The microscopic examination was

made by Prof. F. R. Zeit, of the Department of Pathology at Northwestern University Medical School, who kindly reported on the tumor and pronounced it a typical fibromyxoma.

Postoperative History.—Immediately after operation the patient complained of severe pain in the back and over the entire lower half of the body. The pains somewhat subsided after two or three days and then became localized in the back and legs, where they remained for several weeks. Improvement occurred in the following order: Within twenty-four hours after operation the temperature sense showed signs of recovery; it was noted that hot-water bottles applied to the feet caused a disagreeable sensation. In less than a week after the operation the patient experienced a feeling of discomfort from a full bladder. Within two weeks she could distinguish between extremes of temperature. After three weeks painful stimuli, such as pin-pricks, were perceived as disagreeable. Tactile sensation and fine discrimination, as well as correct localization, of touch were very slow in returning. It was probably one year before the patient's sense of position and fine localization of touch were restored to normal. Although perfect recovery of all forms of sensation occurred within the period stated, it was quite different with motion. It will be recalled that the patient was completely paraplegic at time of operation; all motion in legs and toes was entirely abolished. Signs of return of motion appeared about six weeks after operation. She could then flex the left big toe; somewhat later she gained control over the small toes of the left foot. Slowly and only after many months did a slight degree of motion return in the feet, but the thighs and legs remained spastic. For a long time one could still see the spasmodic movements of the legs on the thighs, which would only with great difficulty be passively extended. This condition gradually improved, but the patient never walked again.

Repeated examinations, made at intervals of three months each, revealed practically the findings as stated.

An examination made Feb. 20, 1909, showed: Good physical condition. Sensation and sphincters perfect. In the sphere of motility considerable improvement was noted; the patient could now use the feet and legs in operating a sewing machine several hours in succession. She was also able voluntarily to flex the legs against the thighs, full length. Flexion and extension of feet and toes could be performed fairly well. With some effort extension of the left leg was possible with the thigh flexed; extension of the right leg with the thigh flexed was only partial. For a few moments she could stand when supported by her upper extremities. She had not attempted the use of crutches because of her present faith in Eddyism, which forbids the use of such physical artificial aids.

Examination on May 22, 1909, yielded practically the same findings as previously. She had been persuaded to try crutches, but they did not sustain her weight, owing perhaps to her inability to extend the legs completely, slight contractures having formed in the knee joints. By means of orthopedic measures I believe her condition may be considerably improved.

REMARKS

The case presented a typical classical picture of intradural tumor in the upper dorsal cord, not unlike the first case with successful operation by Victor Horsley.[1] In that case, however, the neuralgic state was protracted over a period of four years, from 1884 to 1887. In this case the period of root-irritation lasted seven or eight months. The pains, for a time at least, were distinctly localized on the right side, and, as the tumor enlarged in width, pains also appeared on the left side. Eight months later cord symptoms were very much in evidence, and, as in other cases, the most vulnerable motor tracts suffered before the more resistant sensory strands. A further similarity of this case with that of Gowers-Horsley is seen in the fact that the tumor on microscopic examination proved to be a fibromyxoma; but in this case, unlike theirs, the tumor had grown rapidly.

Considering the final outcome, how should this case be classified?

According to Collins,[7] it will have to be classed with the partially successful cases. In Collins' excellent article on spinal cord tumors he notes that an operation is considered successful when there is cessation of pain and recovery of motor power; partially successful when there is relief from pain, cessation of progress of the case, and slight regain of motor power; unsuccessful, when followed by death within a few weeks. This patient showed complete recovery of sensory functions, some regain of motor power and no return of symptoms two and a half years after operation.

Had the case been diagnosed before degeneration occurred in the motor tracts it would in all probability have found a place among the completely successful cases. From the history it is apparent that a positive diagnosis of spinal tumor could have been made at least three months before operation, yet ten weeks had been lost in treating the patient for syphilis. This is all the more regrettable since we know that gumma of the cord membranes is rare, and when found should be treated surgically the same as other tumors.

In a perusal of the recent literature on spinal tumor we discover—in marked contrast with the earlier publications—that cases are now diagnosed and patients operated on much earlier than formerly, with the inevitable result that the percentage of recoveries is becoming larger. Recent conservative estimates place the proportion of partial and complete recoveries after operation at 50 per cent. This has become possible only through the combined efforts of neurologists and surgeons, the former of whom have made spinal localization comparatively easy, while the latter have simplified and improved the surgical technic.

The wide interest which is at present being taken in surgical neurology is largely a result of the awakening to the possibilities of surgery, particularly of the peripheral nerves and spinal tumors. Already in 1895 M. Allen Starr,[8] after analyzing 123 tumors of the cord, argued that an early diagnosis of spinal tumor was possible; that removal could be accomplished without injury to the cord; and that the operation itself was not one of great danger. He considered that in nearly 75 per cent. of cases spinal tumors could be operated on successfully and he expressed the opinion that future statistics should show recovery in a much larger proportion of the cases than they did at that time. Considering that Bruns[9] in 1897 could collect only 20 cases of spinal tumors operated on, and Bregman[10] as late as 1906 could find only 50 cases of operation, it was remarkable that Stursberg[11] in his report could make the statement that up to 1908 he had already been able to collect 119 observations of extramedullary tumors operated on, in which diagnosis was proved either by operation or by autopsy. In the same year E. Flatau and N. Zylberblast,[12] who conjointly reported a case, estimated the total number of published cases of extramedullary tumor with operation to be 136, of which number 106 were intradural or extradural tumor, while 29 were cases of tumors originating from or extending to the vertebræ. It is noteworthy that Schultze[4] alone in 1907

7. Collins, J.: Spinal Cord Tumors, Med. Rec., 1902, p. 882.
8. Starr, M. Allen: Tumors of the Spinal Cord, Am. Jour. Med. Sc., 1895, p. 614.
9. Bruns: Die Geschwülste des Nervensystems, 1897.
10. Bregman: Ein Beitrag zur Klinik und zur operativen Behandlung der Rückenmarksgeschwülste, Deutsch. Ztschr. f. Nervenh., 1906, xxxi, 68.
11. Stursberg: Die operative Behandlung der das Rückenmark und die Cauda comprimirenden Neubildungen, Centralbl. f. d. Grenzgeb. d. Med. u. Chir., 1908, Nos. 3 and 7.
12. Flatau, E. and Zylberblast, Frl. N.: Beitrag zur chirurgischen Behandlung der Rückenmarkstumoren, Deutsch. Ztschr. f. Nervenh., 1908, xxxv, 334.

could report on 14 cases with operation, in which number 6 patients made perfect recoveries and 2 showed improvement. Oppenheim[5] in the same year reports practical recovery in 4 out of 9 cases with operations in which he had made a correct localizing diagnosis.

In spite of the great activity displayed in this branch of surgery during the last ten years, the total number of cases with operations up to date has not exceeded 150. And of this number the percentage of recoveries has only risen in the hands of the most expert surgeons when working conjointly with neurologists.

As for the total number of complete recoveries in cases with operation, Harvey Cushing,[13] who reports a case of his own with complete recovery, in 1904, could find only 10 other successful cases. But already in 1908 R. T. Williamson[14] found 51 published cases of meningeal spinal tumor in which operation was successful and had been followed by complete or almost complete recovery from spinal symptoms.

Several reasons have been advanced for the few recoveries so far recorded. One is that spinal tumor is not always easy to diagnose and localize; a failure to find the tumor usually means death by further inaction. A second important cause for failure is the discovery on the operating table that a correctly localized tumor is inaccessible, hence irremovable, as are most intramedullary and vertebral tumors. And, last but not least, the danger to life during and after operation is still great. While, therefore, by no means underestimating the dangers and pitfalls of surgical interference I am in thorough agreement with those who recommend exploratory laminectomy even in those instances in which the diagnosis is only probable. There should be less unwillingness on the part of the patient to consent to an operation if he is told that inaction will almost invariably destroy his life.

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ABSTRACT OF DISCUSSION

DR. PEARCE BAILEY, New York: I think we have a good many lessons yet to learn in the surgical treatment of spinal cord tumors. If one reads the list of cases in which the patients were successfully operated on, and those in which the operation has not been successful although the tumor has been found, the conclusion is inevitable that we ought to have a very much higher percentage of cures in these cases than we have at present. Many patients die of shock and sepsis and, I believe, from loss of cerebrospinal fluid. I am much in favor of doing operations in spinal cord tumors with the patient's head down, so that the loss of cerebrospinal fluid can be controlled. In a patient operated on in St. Luke's Hospital a short time ago, by Abbe, the tumor was found where we thought it would be. The operation was skillfully performed. There is no better operator for spinal cord tumors than Dr. Abbe; the operation took only 40 minutes; there was no hemorrhage, no infection, and yet there was considerable loss of cerebrospinal fluid. The operation was done on a horizontal table. Within a few hours the temperature began to rise and rose steadily to 103 degrees and 105 degrees, and within about 18 hours after the operation the patient died with a temperature of 107 degrees, with absolutely no infection and no cause discoverable except the loss of cerebrospinal fluid. I think this operation is a grave and serious one and very hazardous to life, and I think it should be undertaken with every precaution.

Dr. Grinker says that the surgeon in his case started by taking out 5 laminæ. I do not see any reason for that. I try to get the surgeons who operate for me to limit themselves in the start, if they will trust my localization, to two laminæ. And then it is easy enough to take out others if necessary. At first remove two laminæ, and then examine, and possibly the tumor will be found in one extremity. Then it is time enough to take out the extra lamina; and 3 is generally enough for the expression of the tumor. I think it is very important, because many patients die of shock, and the operation should be limited to as small an area and done as quickly as possible. In regard to localization I have found useful in the dorsal region Horsley's old rule of 10 cm. above the superior line of anesthesia, however slight the anesthesia may be. We seldom find in spinal cord tumors the profound anesthesia we find in transverse lesions from other causation, and consequently I take as my limiting line the slightest blunting of anesthesia. I think also that we should not refuse this operation simply because we are unable to decide whether the tumor is in the vertebræ or extradural or intradural, or even intramedullary. I know of no absolute means of deciding definitely on any one of these conditions. Thermoanesthesia is no index. Over and over again, meningitis, tumors of the vertebra and tumors of the membranes have caused dissociation of anesthesia. I have seen many operations given up because the anesthesia was disassociated. I think it is a mistake. Even if exact localization can not be made I think the operation should be undertaken promptly and independently of the situation of the tumor with reference to the cord.

DR. MAX MAILHOUSE, New Haven: I want to endorse Dr. Bailey's statement with regard to the dissociation of sensation being due to spinal cord or spinal tumors. I recently had a case of recurrent carcinoma about and in the spine, which resulted in the spine forming a knuckle and pushing the cord to one side, in the middle cervical region, in which an early symptom was disassociation of sensation in addition to severe pain and marked spasm of the muscles, so intense that the case at first resembled a case of spondylitis; but one of the early symptoms, as I said before, was disassociation of sensation; and this disassociation, preservation of tactile sense, with diminution of pain and temperature sense, was very striking in this case.

DR. CHARLES W. HITCHCOCK, Detroit: I recall an interesting case which was presented to the Detroit Neurological Society last November by Drs. Inglis of Detroit and Klingmann of Ann Arbor, the findings of Dr. Inglis, who had seen the case, not being known to Dr. Klingmann. Dr. Klingmann accurately diagnosed the segments involved and the position of the tumor, and it was my good fortune to be present a week later at the operation performed by Dr. Max Ballin of Detroit. As in the case reported, too low a laminectomy was made in the hope of finding the tumor lower down, neglecting Chipault's rule of subtracting two from the determined segment, in the upper dorsal region, to find the exact spinal vertebra. The tumor was found just as Dr. Klingmann had diagnosed it, involving the sixth, seventh, and eighth dorsal segments. The tumor was removed, the patient did well, and the sensory and motor symptoms were both very much improved at the last report.

DR. M. ALLEN STARR, New York: My experience in spinal cord tumors is quite extensive, and I consider the diagnosis a comparatively easy one. I think that the typical symptoms appear so definite and distinct in these cases that there is hardly any danger of mistaking them for anything else. Early operation is essential and in two cases recently the question of whether the patients were syphilitic was decided by the Wassermann test. Finding the cerebrospinal fluid and blood absolutely negative, we avoided the supposed necessary delay of attempting to use mercury and iodid, as has been done so often. In my last case I first saw the patient on Saturday afternoon and the operation was done the following day. The tumor was found. The patient is recovering nicely and regaining power over and control of bladder and rectum that were absolutely lost when I saw her. The paraplegia is passing off. The excessive pain is, of course, the very most important symptom in these cases. I know of absolutely no condition resembling it in all respects except caries of the spine, and that, of course, can often be ruled out by physical examination, or certainly by an *x*-ray examination.

13. Cushing, Harvey: Intradural Tumor of the Cervical Meninges, Ann. Surg., 1904, xxxix, 934.
14. Williamson, R. T.: Diseases of the Spinal Cord, 1908.

The point is well taken by Dr. Bailey that the success in the operative interference with these tumors depends, first, on the avoidance of shock; secondly, the avoidance of hemorrhage; thirdly, the rapidity of the operation, and, fourthly, the limitation of the operation, so far as possible, to the essential parts. There is absolutely no necessity of making very large incisions in these cases. Horsley has laid down a reliable guide; it consists of measuring 4 inches above the level of the upper faintest trace of sensory disturbance, and by that I think the sensations should be tested always from below upward. I wish to make it very clear that a patient who is tested from above downward does not notice the little disturbance of sensation, a little loss, as you go down, but a patient with a disturbance of sensation if you get to the lower part and come up will immediately notice the improved sensation; 4 inches above the upper line you are pretty sure to find your tumor. Therefore, I think two laminæ are ample, the surgeon always having made his preparations to lay bare the lamina above if he fails to find the tumor under the two laminæ that are taken out. The tumor can not be taken out by simply dividing one lamina; two must be removed in order to give room for the enucleation of the tumor. So far as I have seen, these tumors have to be carefully elevated and enucleated in their removal. It seems to me that the prognosis in these operations is constantly becoming better.

DR. JULIUS GRINKER, Chicago: Much as we may dislike it, surgeons are still laboring under the antiquated idea that myelitis is largely syphilis of the cord, and not until they have subjected the patient to a course of rigorous antispecific treatment do they decide to operate. I believe that we should urge exploratory laminectomy in suitable cases, and that we should discourage the routine administration of antisyphilitic remedies, which are useless in spinal tumor and merely permit irreparable damage to be done to the cord structures, as in the case which I reported. I fully agree with Dr. Bailey that as few laminæ as possible should be removed, but certain exigencies will necessitate the removal of several laminæ. I think the danger from loss of support to the spinal column has been exaggerated. In my case four laminæ were removed, yet there is not the slightest sign of wakening in the spinal column.

THE ENDOMETRIUM AND SOME OF ITS VARIATIONS*

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AND
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It is surprising to note how few sharply defined and generally accepted facts have been crystallized out of the great amount of work which has been done on the histology and pathology of the endometrium. The numerous classifications of endometritis, for example, are ample evidence that none is entirely satisfactory, while some, as a matter of fact, are little short of absurd. Particularly unfortunate have been the attempts to classify endometritis along clinical lines, and it seems to have been decided that the most satisfactory or, at any rate, the least unsatisfactory basis for classification is a histologic one.

In this brief communication we propose first to present the results of our studies on the normal histology of the endometrium, with especial reference to the modifications thereof which are associated with the menstrual cycle. It is not our intention to take up a consideration of the various diseases of the endometrium, except in so far as our conception of these diseases may be influenced by our knowledge of normal variations in the structure of the uterine mucosa.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Our general study is based on the microscopic examination of the uterine mucosa from over 200 cases in the gynecologic clinic of the Baltimore City Hospital during the past three years. In the majority of these cases the mucosa was obtained by curetting, in a smaller number by extirpation of the uterus for one reason or another. In all cases the material was fixed immediately after removal, and the stain employed, with few exceptions, was the ordinary hematoxylin-eosin method.

In order to study the menstrual phenomena there was selected from the entire number of cases a series of 50 in which an accurate record of the menstrual history was available, including the date of the menstrual onset and usually of the termination of the period preceding the operation. In some of this group the material was obtained by routine curetting in connection with plastic operations of one form or another, there being no evidence of uterine disease. In other cases the mucosa was obtained from cases complicated by various associated conditions, such as myoma, salpingitis, displacement, etc., although no case was admitted to the series unless the regularity of the menstrual cycle was undisturbed.

In the main, therefore, the conditions surrounding our work have been similar to those under which was carried on the valuable work of Hitschmann and Adler,[1] to which we shall have frequent occasion to refer.

In order to appreciate the change which recent investigations have produced in our conception of the normal structure of the endometrium one need only read the descriptions contained in the various text-books of gynecology and anatomy. In the usually accepted sense the endometrium is the corporeal portion of the uterine mucosa, i. e., the portion above the level of the internal os. It is usually described as consisting of a surface epithelium, glands, and an interglandular tissue or stroma. The epithelium is of the ciliated columnar variety, differing from that in the cervix in that the cells are not so tall and slender, that the nuclei take on a paler stain and are situated near the center of the cells instead of near the basement membrane, and that the protoplasm takes on the eosin stain, while that in the cervix not infrequently takes a pale hematoxylin stain on account of the excessive amount of mucus which it contains. The glands are described as being of the simple or branched tubular variety, being lined by epithelium continuous with and similar to that of the surface. The stroma, according to most authors, consists of a delicate reticular network of fibrillar connective tissue containing in its meshes large numbers of round, oval, or spindle-shaped cells. At the present time there is no unanimity of opinion as to the exact nature of the stromal tissue. Nagel[2] and Waldeyer[3] believe it to be of a lymphoid type and compared it to the stroma of the intestinal mucosa. Leopold[4] regarded it as a spread-out lymph gland (*Lymphdrüsenfläche*), while Johnstone[5] believes that it is of an adenoid type. Most of the best authorities, however, accept the view of Minot, that the stroma is merely a form of embryonic connective tissue, and this is probably the correct one.

From a physiologic standpoint the endometrium bears an important relation, whether active or passive, to the function of menstruation, and it would be interesting, if time permitted, to trace the various views which have

1. Monatsh. f. Geburtsh. u. Gynäk., 1908, xxvii, 1.
2. von Bardeleben: Handbuch der Anatomie des Menschen.
3. Quoted by Williams: Text-Book on Obstetrics.
4. Arch. f. Gynäk., xi.
5. Brit. Gynæc. Jour., November, 1886.

at different times been held as to the changes which take place in the endometrium at the time of menstruation.

Unfortunately, up to recent years, the extent of these changes had been gauged largely by the comparative study of menstruating and non-menstruating uteri, and there had been no systematic effort to study the histologic structure of the endometrium from the beginning to the end of the menstrual cycle. Within the past few years, however, an important contribution to our knowledge of this subject has been made by Hitschmann and Adler,[1] whose work bids fair to revolutionize our former ideas of the histology and pathology of the endometrium. These observers, after a painstaking study of the uterine mucosa from fifty-eight women at various periods of the menstrual cycle, found that the endometrium, from the cessation of one menstrual flow to that of the next, presents a constantly-changing histologic picture. This cycle of changes they divide into four phases: postmenstrual, interval, premenstrual, and menstrual.

Fig. 1.—No. 749 (low power). Showing premenstrual gland changes. Note the increase in size and tortuosity and "saw-like" appearance of the glands. Curetting done one day before menstruation.

At the height of the menstrual flow the mucous membrane diminishes in thickness and the glands pour out their secretion, becoming narrow and straight. The surface epithelium is frequently lost, but this is not an invariable rule. After the period there takes place a very rapid cell growth in both the epithelium and connective tissue. The glands become larger and wider, although still quite narrow and straight. The epithelium is low and in a condition of rest. By about the fifteenth day the cell growth of the epithelium has progressed to such an extent that the glands become somewhat tortuous, and often assume a spiral or corkscrew-like appearance. Finally, six or seven days before the beginning of menstruation, the glands rapidly enlarge and become tortuous, the cells bulge into the lumen, the epithelium becomes higher and broader, and the lumen is filled with a mucous secretion. These gland changes are much more marked in the deeper portion of the mucosa than in the superficial, so that there is produced a well-marked differentiation into a superficial compact and a deep spongy layer. In this respect there is a marked similarity to the appearance of the young decidua, the resemblance being increased by the fact that the interglandular stromal cells in many cases assume an appearance very similar to or approaching that of decidual cells.

The important work of Hitschmann and Adler has attracted a great deal of attention, and already a number of articles, mostly confirmatory, have been published on the subject. From our own study of the fifty cases selected for this purpose we have been able to convince ourselves of the correctness, in the main, of the conclusions arrived at by Hitschmann and Adler. In our series of 50 cases we found that from a histologic standpoint 13 were to be classified as belonging to the premenstrual group. All of these 13 showed a marked increase in the size and tortuousness of the glands, some exhibiting a high degree of "papillary" formation, others presenting the less advanced saw-like appearance. In 10 of these cases the mucous membrane had been removed at short periods before the beginning of menstruation. In 5 cases the interval was one day (Figs. 1 and 2), and in the other 5 cases it was three, four (Fig. 3) six, seven and nine days respectively. The remaining 3 of the group of 13 cases which exhibited the so-called premenstrual glandular changes are especially interesting in that in all of them operation had been done at a period quite remote from the menstrual period. In one specimen (Gyn. Path. No. 262) the curetting had been performed eight days after menstruation and yet there were many hypertrophic glands throughout the section. As a whole the specimen was not absolutely typical of the premenstrual period, but in certain fields the appearance was quite characteristic. The other two specimens (Gyn. Path. No. 611 and Gyn. Path. No. 717, Figs. 4 and 5) were obtained eleven and ten days respectively after menstruation, and in both the glands presented very decided hypertrophic changes, Gyn. Path. No. 611 especially being typical in every

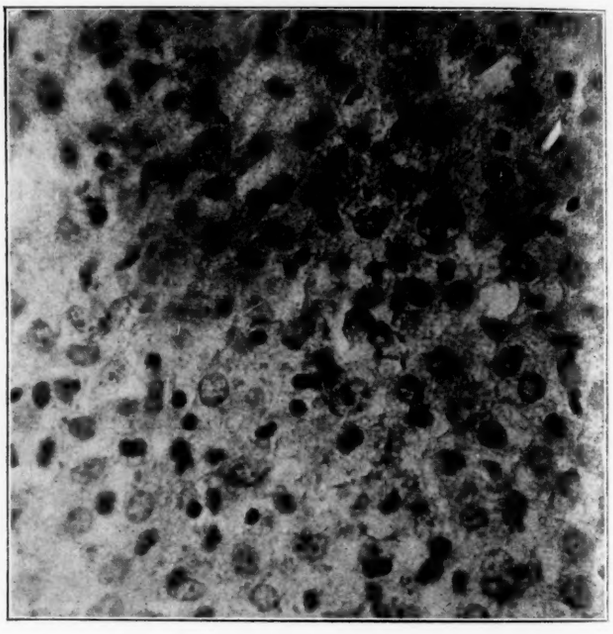


Fig. 2.—No. 57 (high power). Showing decidual transformation of the stromal cells. Curetting done one day before menstruation.

way. Of these three typical cases Gyn. Path. No. 262 was complicated by laceration and hypertrophy of the cervix, a moderate prolapse of the uterus and a small myoma. Gyn. Path. No. 611 was associated with a unilateral salpingitis and Gyn. Path. No. 717 with a laceration of both cervix and perineum.

The fact that premenstrual changes are found at a period so remote from the menstrual epoch, as in these cases, might perhaps be explained on the assumption of an individual peculiarity—as perhaps indicating an unusually early appearance of the glandular changes of the premenstrual period. This seems to us, however, as little more than an evasion of the question, and we feel that a simpler and more plausible explanation can be invoked. In view of the fact that the menstrual process, whatever its underlying cause may be, has as its most striking phenomenon the vascular changes in the reproductive organs, it is not unreasonable to assume that the constantly changing histologic picture in the endometrium is only a result of the influence of the in-

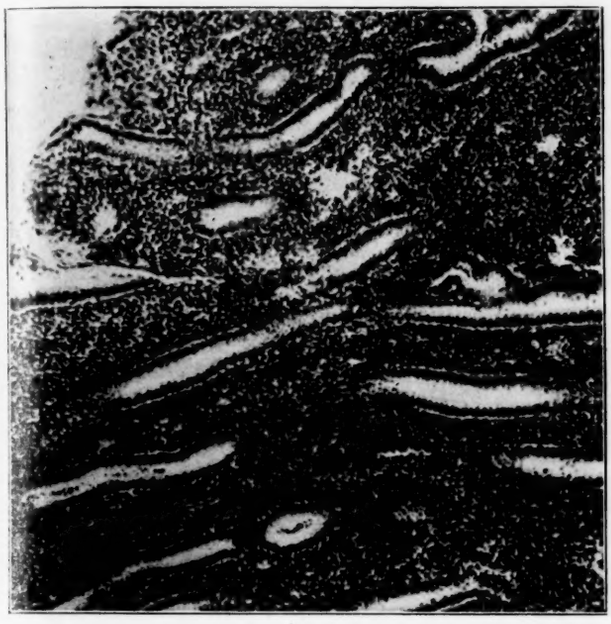


Fig. 3.—No. 647b (low power). Showing the straight collapsed glands of the post-menstrual period. Curetting done four days after menstruation.

creased blood suply on a very susceptible and readily-reacting tissue. The interesting experiments of Federn[6] and others have shown that the blood pressure of a woman reaches its maximum at the premenstrual period, the onset of menstruation being characterized by a rapid fall, after which the pressure rises gradually again to its high point at the next premenstrual period. The blood-pressure curve is therefore parallel with the histologic changes, and it is only natural to suppose that the latter may be largely influenced by the variations in the blood supply of the pelvic organs at different phases of the menstrual cycle. It seems logical to believe, however, that while the normal physiologic stimulus for the hypertrophy of the uterine glands is supplied by the hyperemia of the menstrual process, the artificial stimulus furnished by a pathologic hyperemia may also produce a greater or less degree of such change. The finding of marked hypertrophy of the uterine glands at other than the premenstrual period may thus be explained, although the factor of individual susceptibility must after all play an important part, for the occurrence of hypertrophied glands even in cases characterized by prolonged pelvic congestion is by no means constant.

Hartje[7] has recently employed the term *"subinvolutio mucosæ menstrualis"* to indicate the persistence of premenstrual glands for the first few days of the regeneration period. This, he suggests, may be due to a deficiency of the retrogressive changes normally occurring in endometrium after the onset of menstruation. We believe that he is correct in his opinion that the occurrence of the premenstrual picture in the period of from nine to fourteen days after menstruation is to be regarded as certainly pathologic.

Fig. 4.—No. 611 (low power). Showing so-called premenstrual gland changes at a period eleven days after menstruation. Clinical condition, unilateral salpingitis.

Shickele,[8] in a recent article, also asserts that marked gland changes may occur without any relation to the menstrual process, as a result of uterine disease, adnexal affections, and displacements. In a rather large series of cases characterized clinically by bleeding (menorrhagia or metrorrhagia) in which it was difficult or impossible to determine the menstrual dates, we found marked glandular changes in a considerable number. Concerning this series we hope to report more fully at a later date. Kubo[9] likewise found gland hypertrophy, often very marked, in twelve of the ninety-nine cases of menorrhagia and metrorrhagia.

Whatever the explanation of the occurrence of gland changes under such circumstances may be, therefore, there seems to be no doubt that they may occur, and whether we characterize such changes as glandular hyperplasia or glandular endometritis, their pathologic nature should be recognized. The old rule of Gebhard,

6. Blutdruck und Darmatonie, Vienna, 1894; quoted by Hitschmann and Adler.

7. Monatsh. f. Geburtsh. u. Gynäk., 1907, xxvi, 15; Zentralbl. f. Gynäk., 1907, xxxi, 1465.
8. Beitr. z. Geburtsh. u. Gynäk., 1909, xiii, 358.
9. Am. Jour. Obst., 1908, lvii, 675.

that the glands should be considered abnormally numerous if the distance between them is less than four or five times the diameter of the glands, is a very misleading one, for there are marked normal differences in different mucosæ in this respect. Moreover, in the examination of curettings, the microscopic appearance as to this point varies in different portions of the endometrium, and even more at different depths of the mucosa.

When one considers the individual variations in different women, with regard to the duration and amount of the menstrual flow, it is only natural that there should also be rather wide variations in the degree of gland change, exhibited at the premenstrual period.

As Hartje has pointed out, there is a gradual progression from the straight collapsed gland of the premenstrual period to the gland type of maximum differentiation—the gland with papillary outgrowths and secondary alveoli. In the most marked cases the glands of the deeper layer are markedly widened, the stroma is diminished so that the glands are almost in contact, and the epithelium is swollen with secretion. Many of the

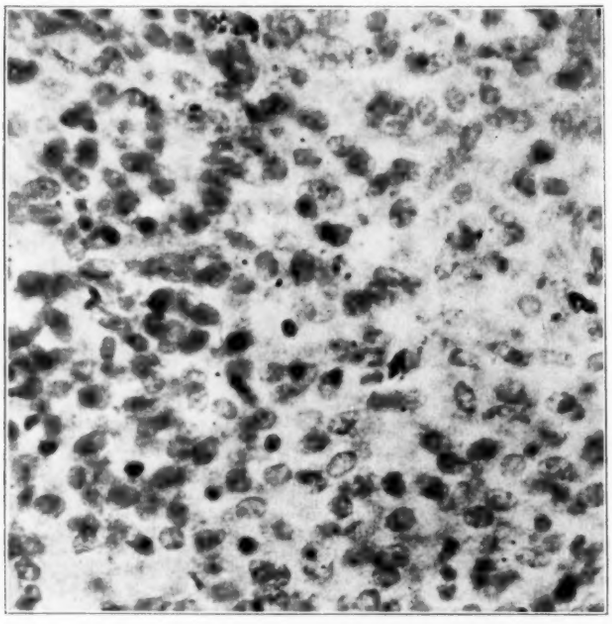


Fig. 5.—No. 717 (high power). Showing decidual transformation of cells at a period ten days after the menstrual period. Clinical condition, laceration of the cervix and subinvolution.

glands show well-marked papillary projections into the lumen, or in the less marked cases take on merely a saw-like appearance *(sägeförmige Drüsen)*. Such glands as these were at one time considered pathognomonic of pregnancy (Opitz[10]), although the recent investigations of Hitschmann, Leitz,[11] Schwab[12] and others have shown clearly that this is not the case. The last named observer, for example, in an examination of a series of 41 curettings, found Opitz's "pregnancy" glands in 5 women, and, of these 5, only 1 was pregnant, the other 4, however, having a definite relation to the menstrual process—3 premenstrual and 1 menstrual. We have repeatedly seen such glands in the premenstrual mucous membranes of non-pregnant women. According to Hartje, the maximum gland changes, with papillary formation, etc., are seen in about one-third of the cases, the remainder showing merely the tooth-like or saw-like appearance characteristic of less advanced stages.

No less interesting than the gland changes of the menstrual cycle are those which take place in the interglandular substance or stroma. As already mentioned, Hitschmann and Adler found that in many cases the stromal cells assume an appearance so like that of decidual cells that there is no possibility of distinguishing them. When one considers that the decidual cell of pregnancy, according to the generally accepted opinion of the present day, is merely the overgrown stromal cell of the endometrium, such findings can scarcely be wondered at. It was Ruge (1880) who first stated that decidual cells may occur entirely independently of pregnancy, but it was not until recent years that the full significance of this view has come to be recognized.

In our series of 50 cases there were 4 in which the decidual modification of the stroma cells was sufficiently marked to be conspicuous. All of these occurred among the group of 13 cases in which the glands exhibited premenstrual changes. Among them, however, was one (Gyn. Path. No. 717), already alluded to, in which operation was done only ten days after menstruation, so that from this it would seem that other influences than normal menstruation may perhaps be capable of producing a decidual modification of the stromal cells.

A number of observers, notably Löfquist,[13] have found decidual cells present to a more or less marked degree independently of pregnancy, in association with such conditions as adnexal disease, tumors, displacements, etc. In most cases, unfortunately, the value of such observations is lessened by the failure of the authors to recognize the possible influence of menstruation in producing a decidual modification of the stromal cells. In a few of the recent reports, such as that of Goodall, however, this possibility seems to have been borne in mind, and it is quite probable that the stromal changes, as well as the gland changes, may be brought about by various conditions other than normal menstruation, such as inflammatory disease, displacements, tumors and tuberculosis. This would seem to be in keeping with the biologic law that the natural result of over-nutrition of tissue is overgrowth.

As in the decidua of pregnancy, the stromal changes of menstruation are seen most conspicuously in the superficial compact layer of the endometrium, these changes being just as characteristic of the premenstrual period as are the glandular phenomena already described. Like the latter, they reach their highest development just before the beginning of the menstrual period. According to Hartje, the decidual-like cells *(decidua-ähnliche Zellen)* are seen in about one-third of the premenstrual cases. All stages of development are seen, from the normal stroma cell, which contains practically no protoplasm, to the typical decidual cell with its large oval nucleus surrounded by a well-marked protoplasmic area.

Even those who maintain that there is an essential difference between the decidua-like cells of menstruation and the true decidual cells of pregnancy have not been able to define wherein the difference lies. The conclusion is forced on us that the modified stroma cells of menstruation *(Uebergangzellen)* are simply different stages in a series in which the true decidual cell represents the maximum development. As Löfquist says, all the commonly observed changes in the endometrium may be regarded as the response of tissue to stimulation—as varying degrees of what has been called the "decidual reaction."

10. Ztschr. f. Gynäk., xlviii.
11. Ztschr. f. Gynäk., [illegible]
12. Ztschr. f. Gynäk., 1904, p. 1425.
13. Zentralbl. f. Gynäk., 1901, xxi, 552.

Such observations as these throw a new light on the question of membranous dysmenorrhea. We have in our work observed two cases in which the membrane expelled from the uterus on microscopic examination showed the presence of characteristic decidual cells, even though, in the light of the clinical history, there was little or no possibility of pregnancy. Many similar cases have been recorded, and, with our knowledge of the extent of the menstrual phenomena in the endometrium, they are not so difficult to explain. Such cases are no doubt due to a throwing off of the superficial layers of the endometrium at the menstrual period, in a manner analogous to the expulsion of a true decidua. The exact cause and the mechanism of the process are still uncertain. The fact that dysmenorrhea membranacea is associated with an extensive shedding of the endometrium would not, however, seem to be a justification for the generalizing assertion advanced by some that such a loss of tissue is the rule in normal menstruation. The early writers, especially Kundrat,[14] believed that menstruation is attended with such extensive or even complete loss of mucosa, but the investigations of Gebhard and others seemed to demonstrate that, as a rule, there is very little loss of tissue during the process. More recently Hitschmann and Adler,[15] Ehrenfest,[16] and others have asserted that the views of Gebhard are not correct, and that there is often a considerable loss of substance during menstruation. The question, however, is still far from being definitely settled, and it is probable that there are marked individual variations in different cases.

The important bearing of this knowledge of the histologic changes corresponding to the various phases of the menstrual cycle can scarcely be overestimated. It at once places an interrogation mark after such terms as endometritis glandularis hypertrophica and endometritis glandularis hyperplastica, and deals a final blow to the early belief in the pathognomonic importance of the decidual cell in the diagnosis of pregnancy. While we are convinced of the correctness of the observations of Hitschmann and Adler on the changes which take place in connection with the menstrual cycle, we feel that their division of the cycle into phases is too schematic for ordinary use, and we do not believe that, as these writers assert, the changes characteristic of the various phases are so sharply defined that the time relation of the endometrium to the menstrual process can be determined from the microscopic picture "with accuracy and often to the day."

Finally, from the study of our own cases and from the reports of other authors, we believe that Hitschmann and Adler have taken an extreme view in practically asserting that glandular changes do not occur except in connection with the menstrual process. Both animal experimentation and clinical observation indicate that the actual underlying cause of menstruation is the secretory activity of the ovary, which produces an internal secretion or hormone essential for its occurrence. The principal effect of this substance seems to be of a vasomotor nature, and is exerted especially on the pelvic blood vessels. It is only natural to suppose that the endometrium plays a purely passive rôle in this phenomenon, and that the histologic changes observed in connection with menstruation represent merely the reaction of the endometrium to the process—a reaction which may, however, be elicited by other influences than that of normal menstruation.

6 West Preston Street—800 North Broadway.

14. Med. Jahrb., Vienna, 1873.
15. Monatschr f. Geburtsh. u. Gynäk., 1908, xxvii, 200.
16. Am. Jour. Obst., 1908, lxiii, 412.

ABSTRACT OF DISCUSSION

DR. HENRY O. MARCY, Boston: Twenty years ago I translated the works of Prof. G. B. Ercolain of Bologna, Italy, who commences his studies in the lower animals, showing that nature during the whole reproductive life is making ready for the continuation of the species. His work shows clearly from his standpoint that there is a process in every menstruation leaving a new mucous membrane with a new possibility of a reproduction of a new material for the development of the species, and that only in this way is impregnation possible. The placenta, in all animals, including the human species, consists of two distinct, fundamental parts, the fetal portion being vascular and absorbent, the maternal, glandular and secretory. In no case do the vessels of the mother anastomose with the vessels of the fetus. The transformation which the uterine mucous membrane undergoes during pregnancy produces the neoformation of a transitory glandular organ of secretion, constituting the material part of the placenta.

DR. JOHN G. CLARK, Philadelphia: It is gratifying to know that laboratory workers in America have taken up the interesting studies of Adler and Hitchens for verification or elaboration. Three years ago this section appointed a committee whose duty it was to offer a simplified nomenclature for endometritis. Great difficulty was encountered in arriving at conclusions, either from the clinical or histologic standpoint, for each writer was inclined to base his nomenclature on personal observations rather than on a uniform conception of this subject by the clinician and histologist. In the light of present investigations it is apparent that this failure in unanimity of opinion is due to the fact that the cyclic changes of the endometrium incident to the menstrual epoch were not then recognized. According to the investigations of Adler and Hitchens, which apparently Drs. Gardner and Novak have largely sustained, the tiny uterine glands, which are collapsed and almost straight immediately after menstruation, go through a definite evolutionary process, during which they increase in size, capacity, and histologic hypertrophy. In view of these cyclic changes it is evident that many of the discrepancies which have been noted by various histologists may be ascribed to the difference in the size and constituence of the glands during the twenty-eight day epoch. Many clinicians have looked askance at a histologic diagnosis, particularly when their clinical sense has been opposed to malignancy. I have always taken the ground that a careful clinical diagnosis is worth more than an inefficient histologic study, especially if the microscopist is not particularly skilled in this special line of pathology. I am sure that many uteri have been removed under the suspicion of malignancy in cases in which what was taken for hypertrophy of the glands or early malignancy was merely due to physiologic changes.

Clinically, therefore, I am sure that this most interesting study, which has been so well presented by Drs. Gardner and Novak, will have a very beneficial effect in the further histologic simplification of the changes in the endometrium. If the microscopist takes into account these changes, and if we, as clinicians, are careful to indicate to him the date of the operation as related to the last menstrual period, we will not lay him open to the error of sending back word to us that the glands are hypertrophied or suspicious of malignancy, when they are merely undergoing physiologic changes. The classification of endometritis will also be greatly simplified and placed on a more scientific basis by these careful studies.

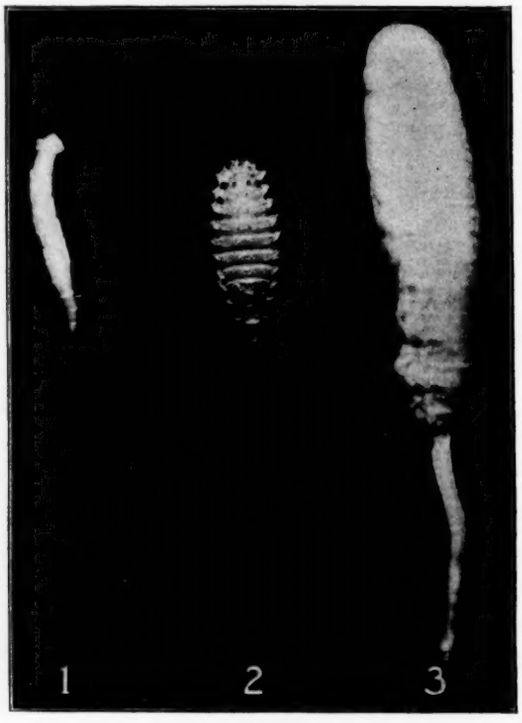
No Medicine Ads in Street Cars.—The New York City Car Advertising Company, which has control of advertising space in the New York City surface cars, has announced that no "patent medicine" or cure advertising will be accepted. This item is respectfully referred to those newspapers which continue to carry in their columns the advertisements of the "master specialists" and others of like ilk, which are manifestly calculated to deceive and defraud their readers.—*Bulletin of Illinois State Board of Health.*

MYIASIS INTESTINALIS DUE TO INFECTION WITH THREE SPECIES OF DIPTEROUS LARVÆ*

E. F. McCAMPBELL AND H. J. CORPER
COLUMBUS, OHIO CHAMPAIGN, ILL.

Infections of man by the larvæ of dipterous insects (myiasis) are very infrequent, although such infections have been known to occur since the early history of medicine. Gilbert[1] reviews the history of infections of this kind in a recent article and calls attention to some of the earlier observations.

Myiasis occurs both within the body and on its external surfaces. Thus we have myiasis interna and myiasis externa. In the former should be included those cases in which the fly larvæ invade the dermis and subcutaneous tissues (myiasis hypodermatis) and those in which they invade the intestines (myiasis intestinalis).



Larvæ isolated from case of myiasis intestinalis: (1) *Musca domestica;* (2) *Anthomyia canicularis;* (3) *Eristalis tenax.*

In the latter should be included those cases in which the larvæ invade wounds and open abrasions of the epidermis and dermis (myiasis dermatosis).

REPORT OF CASE

The case which we report is one of myiasis intestinalis from which three separate and distinct species of larvæ were isolated and is the only one in medical history, as far as we can determine, in which a mixed infection has occurred.[2]

History.—Mrs. McL., native of Ohio, resides on a farm, widow, mother of ten children. With the exception of two, all her children are deceased, some dying of infantile infections and two in later life of tuberculosis. The patient was in good health until the age of 57 (fifteen years ago), when she developed an acute catarrhal gastritis. The gastric trouble has since persisted. The patient has been under medical treatment almost continually since. At the age of 65 she began to pass "millions" of small green larvæ and a smaller number of white jointed larvæ which, the patient states, are similar to those recently passed. This attack of myiasis lasted about one year and the patient noticed nothing more of the larvæ until the age of 70 (two years ago), although there was no improvement in her health. She became very much emaciated during this period of five years. The larvæ have been intermittently passed in large numbers during the last two years and still persist. The patient noticed that during the last two years much larger organisms were passed in addition to those noted five years previous. She describes these organisms accurately and states that they are frequently twice the size of those which we have recently obtained. The patient states that she has had a continual feeling of distress in the abdomen since the attack of gastric trouble at the age of 65. The abdomen frequently becomes distended and colicky pains in the epigastrium have occurred at irregular periods. The larvæ, she states, are usually passed in a watery discharge and few, if any, have ever passed in the ordinary stools. Attacks of nausea and vomiting have occurred at irregular intervals since the gastric disturbances at the age of 65. She has never observed any of the larvæ in the vomit. The patient states that at the age of 65 her weight was 180 pounds. She does not associate the infection with the eating of any food and states that she always eats thoroughly cooked and fresh food. She states that the water which she has used has always been pure well-water. The surroundings of the home of the patient show nothing more insanitary than is usually noted about the average farm. Manure piles and flies are abundant.

Present Condition.—The patient, aged 72, weight 90 pounds, is distinctly neurotic, anemic and much emaciated. The abdomen is slightly distended and tender on deep pressure. The patient states that there is a constant ache throughout the abdomen. The pain seems to be partially localized in the epigastrium. Occasional colicky pains occur. The patient is constipated and does not have intestinal passages unless induced by cathartics. For this purpose she has used Epsom salts almost exclusively. At irregular intervals she passes large numbers of larvæ (250 to 500 c.c. fluid containing as many larvæ as possible). The larvæ are not passed in the usual stools but in a watery discharge. The patient states that a great amount of abdominal pain precedes the passage of the larvæ. Cathartics and aperients have failed to eliminate the larvæ from the intestines. Examination of the circulatory system shows a well-marked mitral lesion and rather advanced arteriosclerosis. The respiratory system is negative except for a slight nervous dyspnea; respirations, 25; pulse, 90. Genitourinary system and urine are negative. The patient is easily nauseated and frequently vomits. She is confined to her bed the greater part of the time and is quite weak. The appetite is absent and the diet almost entirely liquid. Well-marked mental abberrations in regard to the activity of the larvæ within the intestines are noted.

Parasites.—The larvæ which we have examined, some of which were still alive, were passed three days previous to the time we obtained them. They proved to be those of the following species of dipteræ: ***Anthomyia canicularis***, the small black flower- or house-fly; ***Musca domestica***, the common house-fly; ***Eristalis tenax***, the drone or flower-fly.

As myiasis has been noted due to each of these species they will be briefly considered.

THE INFECTING ORGANISMS

Anthomyia canicularis.—This is the common small black house-fly or flower-fly. The family of flies to which this species belongs *(Anthomiidæ)* is composed of a large number of species and the larvæ feed almost universally on decomposing vegetable matter, growing plants, and some few species on the eggs of the grasshopper and locust. In Europe *Anthomyia canicularis* has been noted frequenting vaults and is often spoken of as the "privy-fly." The larvæ are elongated in shape, composed of ten segments and measure 1 to 1.5 cm. in length. They are rounded posteriorly and narrow

* From the Pathological Laboratory of the University of Chicago.

1. Gilbert, N. C.: Infection of Man with Dipterous Larvæ, Arch. Int. Med., October, 1908, II, 226.

2. For the opportunity of study and subsequent diagnosis of this case we are indebted to Drs. V. B. Weller and W. F. White.

toward the anterior end. Each segment possesses a pair of lateral branchiæ, which are used for respiration while the larvæ are in fluid media. Each segment possesses also a pair of prolegs. This species of larvæ were the most prevalent of any passed in the case which we report.

The larvæ of *Anthomyia canicularis* have been reported as parasitic in man probably more often than any other of the dipterous insects. They have been noted to occur in the intestines, ear, vagina, and female urethra. A review of the literature shows about thirty cases of infection with anthomiide larvæ. In about twenty-five cases of these the intestines were infected. Of the total number of cases reported five were in the United States. It is impossible to state just how many of the cases were due to *Anthomyia canicularis,* as frequently the exact species was not determined. It seems that there are about twenty authentic cases of myiasis due to this particular species.

Musca domestica.—This is the common house-fly. The eggs (120 to 150) are deposited in horse-manure almost exclusively, but also occasionally on other excreta and decomposing vegetable matter. After the hatching of the eggs, which occurs in from six to eight hours, the larvæ feed on the decomposing animal and vegetable material. The larvæ are white pointed maggots 1 to 2 cm. in length and composed of nine or ten well-defined segments. Around each segment are a number of short branchiæ, which serve as respiratory organs. The larvæ grow rapidly, molt twice, and reach full size in from four to five days. The pupæ which follow persist for four or five days and from these the adult fly emerges, making a total of eight to ten days for the entire cycle. These flies are thought to pass the winter in the pupal stage.

Comparatively few larvæ of this species have been passed in the case reported. Cases of myiasis with the larvæ of this species are rare, there being only five or six authentic cases in the literature. Some of the other members of the family *Muscidæ* frequently infect wounds, ulcers, the nasal sinuses, ear and occasionally the intestine.

Eristalis tenax.—This is the so-called drone-fly. It is somewhat larger than the honey-bee and shows a marked protective mimicry for this last-named insect. It is a flower-fly and very active. It belongs to the family *Syrphidæ,* of which there are 2,500 species, 300 having been described in the United States. This fly is occasionally observed within doors in the late autumn. The larvæ are famous for their "rat-tailed" appearance. They are found on decomposing animal and vegetable matter and in soft mud. The larvæ measure 2.5 to 3 cm. in length and consist of seven segments, each bearing a pair of tubercles or prolegs. A well-defined head and mouth parts are absent. The anterior end possesses two pairs of hooklets. A long slender projection 2 to 3 cm. in length extends from the posterior portion of the body and this contains a small, contractile tube with breathing pores at the end. This appendage is projected up and is used by the larvæ to obtain air when buried or in fluid media. At times the larvæ are quite active and crawl about.

Cases of myiasis with *Eristalis tenax* larvæ are extremely rare. No cases are recorded in which accurate data are given. It is the rarest of the three species considered in this report.

GENERAL CONSIDERATIONS

The source of the infection in this case of myiasis intestinalis can not be definitely determined. The patient possibly ate the eggs or newly hatched larvæ with food materials. It is not probable that adult larvæ were ingested without the patient's knowledge and we do not think from the examination of the patient that the larvæ or eggs were purposely ingested. Finlaysen's[3] suggestion that the eggs which may be deposited around the anus and the larvæ, after the hatching of the eggs in from six to eight hours, invade the intestine from this source, is credible. We are of the opinion that there has been only one, with a possibility of two, infections in this case. We think that the primary infection occurred seven years ago when the larvæ were first observed. If there was a second infection it must have occurred two years ago at the time the occurrence of the large number of the larvæ was noted. We do not know but that larvæ may have been passed during the interval. At the time the larvæ were first noted and since there has been gastric trouble. This is a common observation in cases of myiasis. The cases are too rare to assume that the patient has been continually reinfected.

In reviewing the literature from an entomological standpoint we were surprised to note that comparatively nothing has been done in the study of the metamorphosis of the various insects. The bluebottle fly (*Calliphora erythrocephala*) is practically the only species which has been studied.

The following facts may be noted in regard to flies: Some lay no eggs, living larvæ issuing from the female (viviparous). It has also been noted that when certain of the dipteræ become parasitic no wings are developed. Nothing seems to be known as to whether the larvæ may reproduce, as has been noted in the embryonic types of some other low forms of animal life. The sexual organs in the larvæ, according to most entomologists, are not completely developed until after the adult fly stage is reached. The larva is entirely different from the adult fly and during the pupal stage which intervenes all the organs of the larva, except the reproductive, undergo degeneration and are regenerated. Such an arrangement suggests a very high specialization of these organs and it may be possible that when these larvæ become parasitic within the body reproduction may take place. It seems positive that the eggs can hatch and the larvæ grow to full size in the intestine of man. It has also been observed that larvæ may exist for very long periods of time within the body.

There seems to be four possible explanations for the continued presence of the larvæ within the body.

1. Persistence of the larval state for two to seven years. It must be assumed that very large numbers of eggs or very young larvæ were ingested, bearing in mind the number which have been passed. There is one case in the literature of twelve years standing.

2. The reproduction of the larvæ within the intestine. This would most easily account for the large numbers passed for a series of years.

3. The completion of the cycle by the hatching of the larvæ into the adult parasitic fly (wingless) and the laying of eggs by these flies in the intestines. We have observed no adult flies or remnants in the excrement.

4. The continued reinfection by the eating of eggs or larvæ or the deposition of eggs around the anus and their subsequent invasion of the intestine. There is the possibility that this patient was infected twice, once seven years ago and again two years ago. There is also the possibility in this case that the patient purposely ingests the larvæ. We think that this possibility has been excluded.

3. Finlaysen: Brit. Med. Journal, 1889, i, 1285.

Of the four possibilities we are inclined to believe that the first, with possibly the second, furnish the most logical explanation for this interesting case of myiasis.

Experiments will be made and reported on later as to the effect of the various digestive enzymes on the larvæ and their activity.

PREVENTION OF MALARIA*

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MOBILE, ALA.

Statistics show that malaria prevails in every state in the union except Wyoming; but because of climatic, meteoric and geologic conditions favorable to the growth of the anopheles mosquitoes, the southern states and the states adjacent to the Mississippi, Missouri and Ohio rivers show the greatest mortality from the disease.

Statistics compiled from the last census[1] show that there died, from malaria, in the United States in the year 1900, 14,909 persons, distributed by states as follows:

Alabama	1,055	Montana	5
Arizona	17	Nebraska	32
Arkansas	1,730	Nevada	10
California	119	New Hampshire	18
Colorado	21	New Jersey	110
Connecticut	110	New Mexico	89
Delaware	19	New York	308
Dist. of Columbia	63	North Carolina	527
Florida	366	North Dakota	4
Georgia	1,011	Ohio	156
Idaho	4	Oklahoma	134
Illinois	497	Oregon	23
Indiana	340	Pennsylvania	140
Iowa	84	Rhode Island	24
Kansas	261	South Carolina	749
Kentucky	344	Tennessee	987
Louisiana	1,030	Texas	1,331
Maine	16	Utah	6
Maryland	131	Vermont	9
Massachusetts	70	Virginia	409
Michigan	168	Washington	13
Minnesota	9	West Virginia	34
Mississippi	983	Wisconsin	5
Missouri	965	Wyoming	0

Of those who died from malaria in 1900, 9,320 were white and 5,589 colored. In the last census the colored population was approximately one-ninth of the whole, while more than one-third of the deaths from malaria were among the negroes. This high death rate from malaria among the negroes, who were formerly supposed to be more or less immune to the disease, may be accounted for by the fact that the negro population, in the states showing a high death rate from malaria, is large, and the negroes, representing the laboring and poorer classes, live in insanitary surroundings and, either from poverty or neglect, do not take treatment for the disease.

I have seen anopheles mosquitoes breeding in Central Park in New York; I have seen the plasmodium of malaria in blood obtained from the child of a millionaire residing on Fifth Avenue, and it is the same variety of mosquitoes, and the same type of protozöon, that I have seen in the swamps of the rural districts of the far south.

The problem of malaria, since it affects all sections of our country and all races and classes of our citizens, is a national one, and I shall discuss it from that point of view, though I admit that the section of country which I represent is vitally interested in this subject. In this connection I submit a few paragraphs from my address[2] as chairman of the section on medicine of the Southern Medical Association, delivered in Atlanta last November.

Perhaps the most important health problem which affects the prosperity of the south is malaria. One has but to travel in the eastern, northern and western states to find that in those sections the south is regarded as a hotbed for malaria. No doubt thousands of settlers have sought homes in the west and elsewhere in preference to the south, because they feared to take their families to a section which they considered so unhealthful. Many travellers avoid the south, and capitalists have been deterred from making investments in our section because of the fear of malaria. I realize that such impressions are largely due to prejudice and to ignorance of the health conditions of the south, but it is also true that we have more malaria than we should have because, with our present knowledge of the disease, it should soon be stamped out of our towns and cities and made a rare disease in the country. . . .

I have not statistics to show how much malaria has decreased in the south in the past two or three decades, except in the state of Maryland,[3] but its prevalence has been wonderfully lessened and it has become a much milder disease, so that to-day the severe types are rarely seen.

The south is enjoying splendid prosperity in all lines, and she should erase from her fair name the blot of malaria, because it is a disease which can be prevented, and which interferes very materially with her industrial development.

Malaria destroys more lives every year than have all the epidemics of yellow fever in the past half-century, and there are several millions of our citizens in the United States to-day whose wage-earning capacity is limited because of the mild and chronic forms of the disease; yet malaria is preventable, and quinin is a specific for the disease.

In my opinion, malaria is a much more serious disease than yellow fever for the reason that one attack does not confer immunity, as in yellow fever, but predisposes to subsequent attacks; and because malaria is considered such a mild disease it is not properly treated and often assumes a chronic form which saps the vitality of the individual, thereby rendering him more susceptible to all other diseases, which are made more serious by the complication of malaria. The effects of yellow fever are soon over, while the victim of malaria may have the disease for years. I believe that the high death rate from nephritis in the southern states may be largely accounted for by chronic malaria.[4]

The existence of a few cases of yellow fever in a city causes a panic which destroys its commerce; there is an exodus of a large portion of its population, and cities, states and the nation will spend thousands of dollars in quarantines and in stamping out the disease; yet in the same city there may be thousands of cases of malaria—nothing is thought of that—and there has never been any organized effort to stamp out malaria because its ravages are "seen so oft" and we are so "familiar with the monster's face" that we endure it as if conditions could not be remedied.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Twelfth Census of the United States, 1900, Vital Statistics, Vols. 1 and 2.

2. Harris, Seale: Some Problems in Medicine which Affect the Prosperity of the South, Jour. South. Med. Assn., April, 1909.

3. Thayer, W. S., and Hewetson, J.: The Malarial Fevers of Baltimore, Johns Hopkins Press, 1895, Baltimore. The Present Decline of Malaria in Maryland, Maryland Med. Jour., 1905, xlviii, 289.

4. Marchiafava and Bignami: In Twentieth Century Practice of Medicine, New York, 1900, William Wood and Company.

Both malaria and yellow fever are transmitted by mosquitoes, the only difference being that they are carried by different varieties of mosquitoes which breed under different conditions: the anopheles breeding in puddles, undrained ditches, swamps, and in the scum on the surface of stagnant and slowly moving water along the banks of rivers and small streams, while the *Stegomyia calopus* has its habitat in the standing water of old cans, bottles, gutters of houses, badly drained sewers and other water-containers in and around human habitations. The anopheles must be infected by biting a malarial subject just as the stegomyia must get the infection from man. Since the above facts regarding the transmission of yellow fever and malaria are true, it would seem that the same measures should be employed in stamping out malaria as were used so effectively in stamping out yellow fever in Havana and in the Canal Zone. According to Colonel Gorgas,[5] the mosquito crusade in Havana not only freed that city from yellow fever for the first time in more than a century, but practically eradicated malaria at the same time. The number of deaths per year from malaria, in the city of Havana, before American occupation, averaged 350; after three years of sanitation by Colonel Gorgas and his assistants the deaths were reduced to 40 per annum.

That malaria may affect the welfare and destiny of nations is shown by the fact that students of history believe the decadence and downfall of ancient Greece and Rome was, to a great extent, due to the life-and-energy-sapping disease—malaria.[6] They believe that malaria is largely responsible for the transformation of the most learned, cultured and physically the strongest race of people in the history of the world into the ignorant and morally and physically degenerate people who to-day live among the ruins of Greece, which is now regarded as a "death hole for malaria."[7] The writings of nearly all the Roman authors contain many references to severe and destructive epidemics of malaria, and the efforts to drain the deadly Campagna date back before the time of the Cæsars. The prevalence of malaria in Italy no doubt had much to do with breaking the spirit of the ancient lordly Roman, "who was greater than a king," and thus helped to bring about the decline and downfall of the Roman empire.[8]

In the earliest years of this republic, and even in the first few decades of the last century, malaria was prevalent in the southern states to an extent which greatly interfered with their development. At that time quinin was such a rare and expensive drug that it could not be obtained, particularly in the rural districts, and nothing was known as to the nature and cause of the disease, so that thousands died from the malignant types of malaria.

The first capital of Alabama, St. Stephens, which, at one time, in 1810, was a thriving town of several thousand people, was literally wiped off the earth because malaria was so prevalent and of such severe type that its inhabitants either died or abandoned their homes. With our present knowledge of malaria, the inhabitants of old St. Stephens could live in perfect health, without one of them having a symptom of the disease which a century ago destroyed their prosperous little city.

Malaria was the principal obstacle to the completion of the Panama Canal by the French; and I may add that it has been the cause of the failure of many smaller enterprises in our own land.

Now let us consider the question of how malaria affects the prosperity and happiness of our nation to-day. I will first discuss the question of what malaria costs the United States, of how much money is spent each year because of the ravages of this now mild and easily preventable disease.

According to the census for 1900, there died from malaria in the United States 14,909 persons, and, estimating the value of a human life at $3,000 (the legal estimate is $5,000), malaria costs our nation from loss of life alone $54,727,000 each year. The death rate from malaria is very low; probably not one out of 500 people affected dies from the disease, and, adding to the death losses the loss of time and decreased earning capacity of the millions in the United States who are afflicted with the chronic and mild types of the disease, and the money paid out by the people in quinin and other medicines, to say nothing of the doctors' bills, on account of malaria, the cost of malaria to our country is enormous and astounding.

Dr. Albert Woldert, of Tyler, Texas, in a paper[9] read before the Texas State Medical Association, gives statistics from the hospitals of the United States Army posts in Texas in the year 1901, showing that one person in seven residing in those posts had malaria at some time during the year; and, according to his statistics from the railway hospitals, located in all sections of Texas, one railroad employé out of every four had malaria. Dr. Woldert states that about 3,000 people die annually from malaria in Texas, and he estimates that the financial loss from malaria to the people of the State of Texas during the year 1901 amounted to the enormous sum of $5,333,320. If it cost Texas that sum, the loss to the United States is at least $50,000,000 to $100,000,000 per annum. These figures give what malaria costs in cold cash, and do not take into account the sorrow and suffering of the millions who are afflicted with this preventable disease.

Is it worth while to combat, and to hope to exterminate, a disease so widely prevalent in the United States?

In answer to this, I would point to what has been accomplished by the Italians in the last five years. Though Italy has suffered more from malaria than any other nation, it should be said to the credit of her physicians that they have studied the disease most carefully and have contributed more than those of any other nation to our present scientific and practical knowledge of malaria. The Italian Society for the Study of Malaria has made most valuable contributions to the science and literature of the disease. The Italians have also made practical use of their knowledge of malaria by aiding the physicians in their campaign against the disease, and even though in financial difficulties Italy has spent millions of dollars to prevent the disease. She not only enacted and enforced laws to stamp out malaria, but went into the manufacture of quinin, selling it to her citizens at the cost of production and giving it free to her poor. That this expenditure of money and the campaign against malaria as made by the Italian government and its physicians was wise is shown by the result. The mortality rate from malaria in Italy for the

5. Gorgas, W. C.: Malaria in the Tropics, THE JOURNAL A. M. A., 1906, xlvi, 1416.

6. Jones, Ross and Ellett: Malaria: A Neglected Factor in the History of Greece and Rome, 1907, Cambridge.

7. Ross, R.: Malaria in Greece, Jour. Trop. Med., 1906, ix, 341, 351.

8. Jones, W. H. S.: Malaria and History. Ann. Trop. Med. and Parasit., 1907, i, 529-546.

9. Woldert, A.: Malarial Fever, Its Expense to the People of Texas, Transactions of the Medical Association of Texas, 1904, pp. 37-61.

past five years has been reduced two-thirds (Thayer). Think of the saving of lives and suffering to the people of our country if our mortality and morbidity rates from malaria can be reduced even two-thirds!

The results in the mosquito crusades in Havana and in the Canal Zone should encourage us. As I have said, malaria was practically exterminated in Havana, and the following extract from Gorgas' last report[10] shows how malaria is being conquered in the Canal Zone under the most favorable circumstances:

> In 1906 we had from malaria 233 deaths; in 1907, 154 deaths; and in 1908, 73 deaths. That is, with a force more than one-third larger in 1908 we had from malaria less than one-third the deaths that we had in 1906. I consider malaria the best measure of the sanitary work done. In 1906, out of every 1,000 employés we admitted to our hospital, from malaria, 821; in 1907, 424; and in 1902, 282. That is, we now have only about one-third the amount of malaria among our employés as we had three years ago.

President Taft, in a recent address, said: "The sanitation of the Canal Zone has made possible the completion of the Panama Canal, the greatest enterprise in the history of the world."

Colonel Gorgas, in an address before the Academy of Medicine in New York, said: "With the removal of yellow fever, malaria and other tropical diseases, the tropics will become the centers of civilization of the world." If it is possible to eradicate those diseases from the tropics—and medical science has practically eliminated yellow fever from the diseases to be considered—how much simpler and easier will the problem be in the United States! It seems almost as feasible to stamp out malaria as yellow fever, and I believe that, with our present knowledge of the disease, it will soon become one of our rare diseases and that it will not be many years before our public health authorities will quarantine against malaria as we do now against yellow fever.

In discussing methods for the prevention of malaria, it may be well first to state the precautions to be used with an infected individual, which are largely the same as with a case of yellow fever, i. e., he should be (a) isolated (placed under a mosquito-net or in a screened room) to prevent his infecting anopheles mosquitoes; (b) the mosquitoes in the house should be destroyed by burning sulphur or pyrethrum; (c) the persons in the house or others exposed to the bites of infected mosquitoes should have preventive doses of quinin (3 grains, morning and night); (d) after the patient has been relieved of all symptoms he should take six grains of quinin a day for a period of at least three months, to be certain that he can not infect the anopheles mosquitoes in his community (Thayer).

Malaria should be classed as a reportable disease. Physicians should be required to report to the city and county health officers the name and location of each patient suffering from malaria, just as is now done with yellow fever and typhoid; and, as in those diseases, the source of infection should be searched for and removed if possible.

To protect the inhabitants of a community, whether in the city or in the country, efforts should be made to destroy all anopheles mosquitoes. Every accumulation of stagnant water, whether large or small, which can become a breeding-place for mosquitoes, should be drained or filled in, or oiled, when those measures are not practicable. The débris, green moss, and decaying vegetable matter on the surface of the water along the banks of slowly running streams should be removed because that is a favorite place for the breeding of anopheles mosquitoes.

When it is not possible to destroy all mosquitoes in any community, every person should sleep in screened rooms, or under mosquito-nets, from early spring until the mosquitoes are destroyed by the frosts of winter.

In badly infected communities (malarial localities) every person should take prophylactic doses of quinin during the summer and autumn months.

A physician in performing his daily duties can do great good by treating each malarial patient as if he had any other infectious or contagious disease, and by instructing his patrons as to the mosquito origin of malaria. He should inform his patients that malaria is infectious and of the methods to be employed in preventing its spread.

There should also be carried on a systematic campaign of education among all classes of people, by means of lectures and by widely distributed tracts, written in popular style, regarding the mosquito transmission of malaria and of how the disease may be prevented, because without the cooperation of the public a crusade against any disease can accomplish but little.

There should be organized a national association for the study and prevention of malaria, just as was done in Italy, with auxiliary state and county societies in the sections most infected.

The medical societies and boards of health in each town, city, county and state affected should take up the work of stamping out malaria. The American Medical Association, and particularly the Section on Preventive Medicine and Public Health, should aid in this great work, at least, by lending its influence toward a practical solution of this problem.

The United States Public Health and Marine-Hospital Service should also be called on to assist in stamping out a disease which causes so many deaths and so much suffering. Malaria is of more importance to the welfare of our country than yellow fever, and the scope of the United States Public Health and Marine-Hospital Service should be enlarged and its force increased so that a trained body of sanitarians can be employed in the fight against malaria just as has been done in epidemics of yellow fever. Malaria may be at times an interstate disease and already the health officer of Mobile is protesting against the introduction into that city of severe cases of malaria from the tropics.

Congress should be urged to create a special commission for the study and prevention of malaria, and to provide an appropriation sufficient to carry on the work. It seems to me that, at this time, a separate commission could accomplish more than by placing the work in the hands of any of the departments of the government now existing, because such a commission could be composed of physicians of wide influence in the localities most affected, men who would be especially interested in getting results and men who could enlist the active cooperation of the various county and state boards of health. The physicians composing such a commission should have hospital facilities for the study of the disease, because there are many problems connected with malaria which have not been worked out.

Congress has appropriated money for the study and prevention of yellow fever. Malaria is a similar disease, and, in my opinion, is of greater importance, certainly, at this time, to the welfare of the entire nation, than yellow fever ever will be again. Congress appropriated $50,000 for the study and prevention of the boll weevil

10. Gorgas, W. C.: Annual Report of the Department of Sanitation of the Isthmian Canal Commission for the Year 1908. Government Printing Office, Washington.

and also considerable money for destroying parasites in wheat and corn; it has given large sums for stamping out diseases in cattle; why should it not be called on to aid in stamping out a distinctly preventable disease, which destroys thousands of human lives and decreases the earning capacity of many hundreds of thousands of American citizens?

The problem of the prevention of malaria means much to the southern states and, therefore, much to the nation. If our section can be freed from malaria, the poor whites and negroes will be stronger physically and, therefore, better laborers; our naturally fertile lands will become more productive; the cotton mills will come to our cotton fields because of our cheap and efficient labor; our iron and other mineral resources will be developed to an extent hitherto not dreamed of, and our Gulf and Atlantic cities will become shipping and manufacturing centers of great importance. If we can prove to the world that malaria, like yellow fever, can be forever stamped out of the south, our prosperity will amaze the world.

ABSTRACT OF DISCUSSION

DR. MARSHALL LANGTON PRICE, Baltimore: There is one subject on which I think I ought to dwell, especially because of its importance; that is, the actual value of the statistics of malarial fever. I doubt very much, under present conditions, that 80 per cent. of the deaths which are actually recorded from malaria in the United States are due to any infection from the malarial parasite: I believe this, from my experience in Maryland, in which state there are probably recorded annually from 8 to 10 deaths from malaria. This makes an impressive showing in figures; but when the original certificates are examined one finds about as follows: returned as the primary cause of deaths, malaria, 2 weeks; intestinal perforation and peritonitis, 10 days. Analyze the death statistics of any state and similar conditions will be found. Outside of the extreme southern states there are not more than 100 deaths from malaria during the year, in the states north of Tennessee. Of over 400 deaths reported in Illinois, I doubt very much if 20 were due to malaria. During the Spanish-American War some observer made a tour of the military camps. He found from 50 to 100 men in each camp laid up with malaria and being dosed with quinin. He was told: "They have malaria." He reached some regimental surgeon, who, I am sorry to say, for the sake of Americans, had a very strong German accent. The observer asked: "How many cases of malaria have you?" He said: "Not one, sir!" His patients were not being dosed with quinin; they were being treated on rational grounds for typhoid fever. In Maryland one of the best studies of typhoid fever was that made by Thayer and Hewittson in 1893. At that time malaria was endemic around the suburban portions of Baltimore. Those cases were not founded on conjecture, but the actual parasite was found in the blood. Since then malaria has almost disappeared from Maryland and in every 1,500 to 2,000 cases of supposed malaria the malarial parasite is found in about 5, as determined by the examination of fresh blood or smears. I have no doubt that in the South, as Dr. Harris states, malaria is a very common disease; but I do not think we ought to accept the usual diagnosis by the physician as an actual basis for malarial figures. I think we ought to reject all such cases and base statistics entirely on those cases in which the parasite is demonstrated in the blood either by staining or by an examination of the fresh specimens.

DR. HENRY B. HEMENWAY, Evanston, Ill.: Illinois is exceedingly defective in vital statistics, the state administration having paid very little attention thereto. It is estimated by the Illinois State Board of Health that 80 per cent. of the deaths that occur in Illinois are reported. Of course, that would increase the 400 deaths from malaria quite materially—put it up to 500; but it has been my observation, as Dr. Price has said, that a large majority of the diagnoses that we get as malarial fever would, with the blood test, prove to be typhoid. So far as I know, in Cook county there have not been more than five cases that have shown the peculiar organism of malaria, within perhaps a couple of years. Some were found along the Desplaines River some time ago. Most of the cases that are recorded as malaria—as fatal cases of malaria, particularly—are really typhoid; and that is one reason why the study of malaria can hardly be separated from the study of typhoid, and the study and prevention of yellow fever. I am glad that attention has been called to the necessity of including among the reportable diseases malaria as much as smallpox or scarlet fever.

DR. W. FORREST DUTTON, Walker's Mills, Pa.: Dr. Price brought up a point that I would like to hear explained, not at any length, but satisfactorily enough for those present, namely: mixed infection. I would ask Dr. Harris to give us, if he can, the frequency of typhomalarial infection, the percentage of cases in which it occurs. I do not think there is any reason why we should be at loss to differentiate typhoid from malaria except when there is a mixed infection. I think that by means of microscopic examination of the blood smears we ought to be able to make our diagnosis very readily.

DR. JUAN GUITERAS, Havana, Cuba: I do not think that in the tropics a mistake in diagnosis is frequently made between typhoid and malaria. I understand the mistake may be made with filaria, hookworm and tuberculosis, but not with typhoid fever. The cases reported as malaria in the tropics—in Cuba at least—would seldom be found to be cases of typhoid fever. Of course, the mistake is possible, but it is exceptional. The unfortunate term of typhomalaria that was invented some time ago was in vogue at that time, because we had no definite means of diagnosing typhoid fever. Malaria in Cuba has fallen from the third and fourth place on the mortuary records to the tenth place. Malaria was originally placed by us on the list of reportable diseases because of the yellow fever campaign. Another important factor in bringing about this reduction of the malarial fevers in Cuba is the isolation of the sick at the port of entry. We are detaining a very large proportion of the patients with malaria who formerly went into the country and, of course, became propagators of the disease. The majority of patients with malarial infection coming from Central America, Mexico, the Mississippi delta, etc., are found with fever on the inspection made by the quarantine officer and are sent to Las Animas Hospital; once there, they are not discharged until they are cured.

DR. J. N. HURTY, Indianapolis: I believe thoroughly in education as the best, perhaps the only way to get these subjects before the people. Sometimes, however, I become discouraged. I went before the county board of health of a certain county in Indiana where malaria was reported as existing to a considerable degree, and from which county several deaths had been reported, and presented the reason of malaria. This county board of health was composed of the county board of commissioners. So I presented the whole matter as carried by mosquitoes and I thought I had made a very excellent impression on the board—that it would take action, print circulars, and perhaps go to draining, and encouraging drainage in the county there and get rid of stagnant water; and I was very confident that I had educated these "practical business men," as they called themselves. One of them turned around and with his hand combed a couple of handfuls of manure out of his beard, saying: "Young fellow, you don't believe all of that stuff, do you?" So sometimes education does not educate, and especially with the man who considers himself highly practical, and—worse yet—with the man who has made a semifinancial success. I think that those men are so consumed with conceit that one cannot get at them. We had a legislator who had cunning enough to amass a hundred thousand dollars. He has decided to be a practical man in his neighborhood; and so practical and so eminent was he in the state that the governor appointed him on a very important examination committee; and when he heard one of our lecturers say that consumption was rarely, if ever, hereditary, he said he did not care if "a thousand doctors and thousand doctor books said that it was not hereditary" he knew that it

was. Now, you see, we have a certain class of people (I suppose they exist in other states), who cannot be educated.

DR. SENECA EGBERT, Philadelphia: I remember distinctly that somewhat more than fifteen years ago the secretary of one of the southern states, speaking of the importance of artesian water as replacing that from shallow wells, declared in one of the bulletins that because of the improvement in the well-water supply in certain parts of his state the reduction in malaria had been over 50 per cent. We all know now that the malaria of which he wrote was not malaria, but must have been something else. My experience was that a great many of the people in a locality where I was working used water from very shallow wells; and I remember in one case water that was undoubtedly contaminated, in this village, was taken from wells located a very short distance from a stream, and everybody believed that the wells filled from the stream. On the higher ground above the wells there were twenty-three privy vaults and pig-sties draining directly toward these wells en route to the stream. These people were persistently ill every season, with so-called typhomalarial fever. I doubt very much if any one in the neighborhood had a true case of typhoid fever, but I am convinced that they were suffering from filth infection, and that their general health was depressed by that absorption of human and pig filth. So it seems to me that possibly we may explain much of the reported typhoid fever or malaria if we dubbed it simply filth infection, and occasionally, paratyphoid.

LIEUT.-COL. JEFFERSON R. KEAN, U. S. Army: With reference to the statement of Dr. Guiteras that there were about 40 deaths from malaria in the City of Havana during the past year, I think that the showing is even better than that, my recollection being that it was only 8. Although the difference between 40 and a lower figure is not great for a city of 300,000 inhabitants in the tropics, I wish to call attention to it as an evidence of the thoroughness of the work being done in Cuba. It means the practical extermination of the pathogenic varieties of mosquitoes in and about Havana. The last year that I was in charge of sanitary affairs in Cuba we had to send away from Havana to get anopheles larvæ to show to our inspectors as a part of their course of instruction. I regard Havana at present as not capable of infection with yellow fever and if any one visits the city, unless he stays much longer than most American visitors, he will probably not see a single stegomyia mosquito. In so excellent a paper it seems ungracious to criticize small points, but there is one which I would like to see corrected. I do not want to detract at all from the excellent public work for the extinction of malaria that is being done by the Italians and which we would do well to imitate; and this notwithstanding the fact (as Dr. Price will probably bear me out) that many of the local epidemics which appear in the northern states are initiated by Italian laborers who bring in the infection. While giving the Italians all due credit for their work I do not like to hear them credited with that of men of other nationalities. Laveran, who discovered the malarial organism, was a French army surgeon, and it was a British army surgeon, Ronald Ross, who first demonstrated the agency of the anopheles mosquito in conveying malaria.

DR. LISTON H. MONTGOMERY, Chicago: I do not think very much of the term typhomalarial fever. Has the Italian government succeeded in reducing the number of deaths by two-thirds?

DR. SEALE HARRIS, Mobile, Ala.: Yes.

DR. MONTGOMERY: It shows that in Italy governmental control is paramount; furthermore, Cuba has succeeded in stamping out yellow fever, and practically malaria also. Cuba has a national department of health; and those two examples would, it seems to me, go to show that our government should have a national department of health, with its physician in the cabinet, as has been done in Cuba. Not only this, but such government commission should have supervision over other contagious diseases, such as tuberculosis and bubonic plague, the latter of which is liable to come from South America, particularly Venezuela, and get into New Orleans almost any day.

DR. J. H. WHITE, New Orleans: The national government is standing guard at this present moment.

DR. MARSHALL LANGTON PRICE, Baltimore: Those of us who have been in New Orleans are familiar with the magnitude of Dr. White's work in the last yellow fever epidemic. I think the problems that he tackled were among the most difficult undertaken in this country; and the brilliant results all of you know.

DR. J. H. WHITE, New Orleans, La.: When I undertook the work of sanitation against yellow fever in 1905 we were confronted with 196 square miles of territory in the City of New Orleans, whereof 44 square miles are built up rather closely; 660 cases of yellow fever; control more or less lost; and nothing but the indomitable pluck of that magnificent people could have enabled success. It was a question of extermination of all mosquitoes in the City of New Orleans or failure. We put 3,000,000 pounds of salt in the gutters in order to make sure that there were no mosquitoes breeding there. Six weeks afterward the water in the bayous through which the gutters reach the lake showed 5 per cent. saline. We cleaned the whole town from end to end; we oiled 68,000 cisterns, and every rain barrel that we could get our hands on; we left nothing to breed on in that 44 square miles of territory; and in the latter end of September, 1905, a new-born baby could have been placed in the streets of New Orleans to sleep. The extinction of yellow fever was not the only result. A result as truly gratifying was that estivoautumnal malaria which had been common in New Orleans, was distinctly cut down. Having a hospital under my supervision, it is only in the past six months that we have begun again to get estivoautumnal malaria by the river front, by reimportation both of the mosquito and infection from the tropics, proof of this being as follows: At certain points on the river we have lying in close contact steamers from Tampico, Coatzacoalcos, and London and other British ports. These Englishmen occasionally develop estivoautumnalis when they have not been in the tropics for a year or two, and after lying for two weeks in the port alongside the wharf close to the Tampico or Coatzacoalcos ship, and to the collection of water caused by the railroads digging out dirt to fill up their embankments: thus proving the reinfecting of our mosquitoes which have come back only in the last two or three years to that point.

Now, as to governmental control, New Orleans has done her duty very well indeed, in the matter of malarial fever. As I recollect it, the annual death rate in New Orleans back as far as the '70's from fever supposed to be malarial, and probably malarial (because typhoid infection was very uncommon), was close to 335 as the average; and to-day, I think it will not go to 25; and that is municipal work: it has nothing to do with the nation. As a national representative, I say that I think this a pretty good showing in New Orleans, which, if you paralleled with Havana, Dr. Guiteras and Dr. Kean will admit, is a far harder proposition; New Orleans is extended on a mud-flat, below the level of the Mississippi half the year round, the water so sluggish in its flow that it has to be pumped out mechanically, and there is every possible inducement to the mosquito to make its habitat in and around New Orleans. Gradually, slowly but surely, they are eliminating the mosquito. A little more persistence, a little more care, possibly another scare, will be needed to bring them up to it; but I feel sure—as sure as a man can of anything that he has not seen done before him—that New Orleans will, in the next few years, be immune to yellow fever.

DR. SEALE HARRIS: What is the difference in death rate?

DR. J. H. WHITE: As I remember it, the general, as compared with the previous death rate, has been reduced about 2: among the white population, say from 19 to 17; among the negro population, a slight reduction, not so much.

DR. G. FARRAR PATTON, New Orleans: Dr. White, with characteristic modesty, has not mentioned what was really the greatest victory that he won there; that is, overcoming the prejudice of the people. I think it is safe to say that at the outset ninety-nine out of every hundred people in New Orleans believed that the mosquito doctrine was all nonsense, and before the campaign was half over the people of the city, down to the street arabs, were convinced of its absolute truth. That was accomplished mainly by a "hammer and tongs" campaign of education, attended with positive proof in the

way of results. As Dr. White jokingly says, he preached in every church in New Orleans, and it is true: he preached a gospel that saved the lives of the people more effectively, perhaps, than the preachers who ordinarily occupied those pulpits save the souls of their people and I consider that this victory—the moral and intellectual victory—transcended in magnitude the wonderful success achieved in banishing the disease proper before the coming of frost.

DR. R. A. NEALE, Chicago: About thirty years ago I was physician to the poor of Washington, D. C.; I had assigned to my territory a section of the city that was nearly surrounded by water, and it was called "Foggy Bottom;" the three thousand odd people living there for ten or twelve years had been suffering intensely from ague; the little huts that they built were nearly all covered with shrubbery and vines. Foggy Bottom was a piece of land that was marshy; in a number of years it became filled in and houses were built there. My predecessor showed me an average every summer of over 600 cases of typical malaria in that Foggy Bottom. I did not know anything about Italy's great progress in preventing malaria, but I was fearfully annoyed every night by the numerous mosquitoes flying about my head, and I decided that I must get rid of them. I made all of those people get rid of all vines and shrubbery, cut down every tree, and put screens in all the windows and burn sulphur in their rooms. I had them makes hundreds of bonfires at night, hundreds of them; because the breezes would come at night and blow the mosquitoes away down the river; in the morning it would come the other way and blow them back again. The next year of my term, instead of having 600 cases of malaria I had only 50; the third year there were only 25, and nearly all of the patients had recently come to reside in Foggy Bottom.

DR. SEALE HARRIS, Mobile, Ala.: I expected my statistics to be questioned, but those obtained from the United States Census Reports are the only ones available. I am willing to admit that many deaths reported as malaria are due to typhoid fever, tuberculosis, sepsis, hookworm and other diseases, but it is a remarkable fact that along the Mississippi Valley, along the valleys adjacent to the Missouri and Ohio rivers, and in the South, where conditions are favorable to the development of anopheles mosquitoes, there are so many "ignorant" physicians who report these cases of malaria. The United States Army surgeons, I believe, represent as good a class of physicians as we have, and the statistics from the United States Army posts, which are located in all sections of Texas, show that one person out of every seven residing in those posts had malaria in 1901. Not only that, other statistics compiled by Dr. Waldren show that in the railroad hospitals in Texas, which are located in cities in different parts of the state, where it is certainly probable that there are competent physicians in charge, one patient out of every four has malaria. I admit that my statistics may not be correct, but from my own observations in the South I believe that there a large proportion of the population has malaria at some time during the year. The death rate from malaria is low, and is growing less, and it is a very mild disease, yet it does affect the vitality of the individual; it makes him more susceptible to other diseases, and I believe it materially affects the general mortality rate. I am sure that malaria is growing less prevalent in the cities where there is proper sewerage. I believe that will account for much of the decrease of malaria in Maryland. In Havana and the Canal Zone where the sanitation was worked out largely against mosquitoes the general mortality rate was reduced about 50 per cent., and as Dr. White has pointed out, the general death rate has been reduced in New Orleans since the crusade against mosquitoes.

Regarding the amount of typhomalaria in the South, I do not know of any cases in which typhoid and malaria have been found at the same time in the same individual, but it is certainly true that in the convalescence of typhoid fever malaria does occur. In the tropics during the Spanish-American War, when a large number of United States soldiers had yellow fever, they suffered a great deal more from the malaria that followed. I realize the difficulties of educating the public, but the lessened prevalence of malaria in the South is due to the fact that the educated, "well-to-do" people have their homes screened with the idea of preventing malaria by keeping out mosquitoes, and with such people malaria is less prevalent than formerly. Another reason why malaria is less prevalent in the South is the widespread use of quinin. Dr. H. F. Harris, of Atlanta, studied a large number of cases of continued fever and the greater majority of them responded to the Widal test for typhoid.

I desire to thank Dr. White for calling attention to my mistake as to Laveran being an Italian, but the Italians have done a great deal in studying malaria, and the literature published by the Italian Society for the Study of Malaria is greater in volume than that contributed by any other country.

My object in bringing this paper before this Section is this: While malaria is not perhaps so severe an infection as yellow fever, typhoid fever, tuberculosis and many other diseases, it is one of the more prevalent diseases in the United States. There is a great opportunity for sanitarians in the South to make records by decreasing the death rate from malaria, and in doing that it would be one of the greatest things for our country, particularly for the South, because we have the reputation of being unhealthful. Eliminate malaria and you will certainly decrease the general death rate.

SOME MINOR GYNECOLOGIC MATTERS OFTEN OVERLOOKED *

I. S. STONE, M.D.
WASHINGTON, D. C.

In routine practice we may fail to appreciate certain rare or obscure diseases which are very annoying to our patients, although not dangerous to life. We find a number of cervical erosions, classified as infectious, which are due to other causes. There are numerous infections of glands of the genital tract which are not understood, and which are not successfully treated because the seat of the infection is not exposed and thoroughly sterilized. Many patients have numerous deep vulvar glands, especially about the vestibule, which may become veritable nests for gonococci or other microbes and will perpetuate an infectious discharge indefinitely unless opened widely and sterilized by iodin or some equally good application. Skene's glands in the urethra are known to harbor infectious organisms and to cause a persistent urethritis. This disease requires surgical treatment if a cure is obtained. The glands must be opened up, thoroughly exposed and treated. My purpose at present is to direct attention to certain nerve changes about the genital tract.

NEURITIS AND HYPERESTHESIA OF THE VULVA AND VAGINA

This is a frequent and often unsuspected cause of annoying symptoms. One of the commonest mistakes made by physicians who treat gynecologic patients is to call every sensitive surface an inflammation. Careful discrimination will enable one to detect certain nerve alterations and to see the difference between them and vaginitis or vulvitis, due to infection or persistent irritation of any kind.

These nerve changes are often seen in a consulting practice. The patient has had fairly good, and perhaps rather active, treatment for infectious disease and has not obtained relief. In fact, nearly every patient coming under observation has been subjected to much local treatment, all of which has probably done harm unless such treatment finally results in a diagnosis.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

SYMPTOMS

The patient is usually a neurasthenic or a neurotic. She is usually suffering from associated disease, which is often due to impaired function rather than to organic mischief. She has a leucorrhea due to more or less endocervicitis, and believes that the discharge causes the painful condition of the vagina. The parts are extremely tender, are often red, and occasionally swollen. Micturition is generally painful in those cases with red and swollen mucosa. The disease is not confined to any special class. We encounter it in virgins relatively as often as in married women. The patient is often told by some physician that she has "ulceration" of some portion of the vaginal mucosa. A slight erosion of the cervix becomes the *point de résistance* of much medical treatment, and in a recent case the patient told me that she had "three different ulcers of the cervix cured by treatment, only to have them return as before."

It is a common practice of many physicians to rely strictly on local treatment for a cure of this disease, because they fail to see the real cause back of the local manifestation. Obviously, all applications of tampons, iodin, ichthyol, boric acid, and glycerin fail unless they benefit by entertaining the patient while time and improved general health bring about a cure. It is in this class that we see the evil result of suggestion. Many of these patients are acutely sensitive to wrong impressions and they are easily and often inadvertently led to think that a slight displacement of the uterus or an enlarged ovary, or possibly some slight intestinal irritation, if treated perhaps surgically, can be cured. It is well known that the uterus has often been removed because the supposed irritating discharge could not be otherwise cured. Of course, in certain cases the neuritis may not easily be relieved or the symptoms even palliated. I have seen several cases associated with urethral caruncle, and I am inclined to believe the pain of a caruncle is always due to an associated neuritis. We have all seen caruncles removed without relief to the patient, and unless they are associated with cystitis the failure is generally due to nerve changes.

DIAGNOSIS

If methods of examination were more exact we would find fewer cases of acute infectious disease of the vulva and vagina and relatively numerous cases of neuritis or hyperesthesia. Naturally, we resort to well-known methods of treatment rather than make the effort to establish a correct diagnosis based on careful investigation. Such empirical practice will perhaps long retain a hold on our favorable consideration, although we always have at hand perfectly satisfactory, even if slower, methods of reaching a diagnosis and consequently a proper indication of treatment. We fail to see any improvement in the teaching or treatment of the minor gynecologic cases since the days of Sims, Emmet and Thomas, and hence surgery has become far more prominent in this specialty than before, and I am confident more than is desirable or necessary.

It is impossible for every one at first to distinguish between cases of hyperesthesia and those of neuritis, but it is comparatively easy for those accustomed to make such distinctions in other portions of the body. Without resort to electrical or other scientific measures, the usual observation and care which is exercised by any physician who is on the alert for these cases will enable him to detect the condition under discussion. In any event, a diagnosis between hyperesthesia and neuritis is not absolutely necessary. The precise portion of the vulva or vagina which may be the seat of the disease is altogether uncertain. I find that the sensitive area in by far the greater number of cases is about the vestibule and introitus. Recently a case of neuritis was seen with dark discoloration of labia around the glands of Bartholin, due to repeated cauterizations, probably with silver nitrate. Occasionally I find a sensitive spot or area on or near the cervix, as in a case recently seen in a pregnant woman. This latter was, however, associated with marked neurotic symptoms which closely resembled inflammatory mischief.

ILLUSTRATIVE CASES

CASE 1.—Patient referred by Dr. C.

Miss X., aged 35, had been treated for infectious endometritis by curettement and intrauterine cauterization, without relief. She had swelling and edema of the vulva with each menstruation, causing great distress. When first seen there was redness; slight swelling and some erosion of the vulva with painful micturition and occasional itching. The urine was nearly normal and contained no sugar. She had been examined for eczema by a competent dermatologist who recognized the unusual features of the case. This patient had associated neuritis and endometritis. I made the diagnosis and treatment was carried on by her family physician, who reports a gradual improvement and nearly perfect restoration to health.

CASE 2.—Patient referred by Dr. W.

Miss Z., a thin, nervous virgin, aged 27, with hymen intact, had been told that she had "ulcers" on the vulva. She had a very slight leucorrhea, but I failed to discover the ulcers or even redness about the vulva or vagina. The uterus was small and retroverted, otherwise all the organs were normal. Her complaint of painful and sensitive vulva and vagina led me to go slowly in reaching a diagnosis. Examination of the discharge was negative, there being no possible infection of the vagina. She passed out of my hands and an abdominal operation was performed for a slight displacement of the small uterus, with the result that she believes herself benefited, although the time has been too short for definite results. Of course, the lesions found at the operation did not explain the symptoms and the girl will finally recover when her nervous disease disappears either by good fortune or by proper treatment.

TREATMENT

The suggestions already made indicate the line of treatment to be adopted. The diagnosis made, the treatment becomes a matter of simple attention to the general health of the patient. In irritable and sensitive vaginæ we should avoid all irritating applications and should use either drying powders or emollients. It should be remembered that any fluid may cause burning and smarting if a neuritis be present. The indication is to protect the tender surfaces so far as lies in our power.

Stoneleigh Court.

ABSTRACT OF DISCUSSION

DR. ROBERT MORRIS, New York City: The colon bacillus is not infrequently an infecting agent in the vagina and uterus. At present I am having some investigations made in a number of cases in which the discharge from the endometrium is secretional in character. This discharge forms a culture medium for the colon bacillus, and the colon bacillus may extend its field from the vagina to even the peritoneum. Another point which I wish to make is in connection with a minor gynecological disturbance that is commonly overlooked, and to which I have given a good deal of attention during the past two or three years—the effect, the remote effect, of eyestrain, particularly in school girls. Recently I had two cases; one patient had an acute anteflexion; one had retrodisplacement. In both cases there was obstinate obstruction of

the bowel to such a degree that both patients were in great distress, and there was a question whether or not they would be obliged to give up their school work. In both cases I was able to eliminate all factors except the eyestrain. The patients were sent to an ophthalmologist and both were well in thirty days. I am having a great deal to say on the subject of eyestrain, but not so much as the men who are throwing the subject into disrepute. A great many ophthalmologists have seen the horizon of this subject enlarged so enormously that they are speaking from imagination rather than facts. Let us speak from facts. In a certain proportion of minor gynecologic cases, particularly in young people, eyestrain is the cause and can be discovered by the proper ophthalmologist—who is not easily found. The ophthalmologist usually makes an examination with reference to an ordinary refraction and his report relates to the sight. That has nothing to do with the case. Remote disturbances are to be sought by men competent to do this. I said to an ophthalmologist recently, who had examined the eyes of a patient in which eyestrain was, in my opinion, the cause of the disturbance: "Now, have you examined with reference to muscle imbalance?" "No," he said, "I have just examined with reference to sight; I will take this matter up." There was a case that had slipped past an absolutely competent man who had not taken up this subject with reference to gynecologic features. It is a matter which has been overlooked by most of us, but let us send cases in which eyestrain is possibly the cause to the proper ophthalmologists, and let him give us either negative or positive testimony.

DR. MARY E. DUNNING, Newburg, N. Y.: I believe that nerve strain has much to do with many local conditions seen in our patients. A case worthy of note is that of a woman of 38, whose menstrual function had always been accompanied with terrific headaches and vomiting. Examination showed nothing abnormal in the pelvis excepting extreme tenderness of the adnexa, and there was a spur which blocked completely the left nares. Two pelvic hydroelectric treatments were given and the spur removed. She has had no nerve disturbances, menstruation has been normal and she has been perfectly well since.

DR. ANGELINE MARTINE, Utica, N. Y.: Dr. Morris' mention of the colon bacillus being a cause of irritation in certain cases, reminds me of a case in a young unmarried woman of undoubted good reputation who had an irritation resembling grossly a gonorrheal infection. I had the discharge carefully examined under the microscope, and found that it was due to an infection by the *Proteus vulgaris*. I have had a series of seven or eight such cases which I have reported. The infection is very intense. One of the cases seems to have been contracted by the use of the public toilet. The source of the other cases could not be traced. The infection so closely resembles gonorrhea that much care should be observed in the examination.

Advantages and Disadvantages of Pasteurization.—One of the chief objections to pasteurization is that it promotes carelessness and discourages the efforts to produce clean milk. It is believed that the general adoption of pasteurization will set back improvements at the source of supply and encourage dirty habits. It will cause the farmers and those who handle the milk to believe that it is unnecessary to be quite so particular, as the dirt that gets into the milk is going to be cooked and made harmless. It is not proposed that pasteurization shall take the place of inspection and improvements in dairy methods. To insure the public a pure and safe milk supply should be regarded as one of the most important duties of the health officer. Whether pasteurization is adopted by a city for its general milk supply or not, no milk should be accepted that does not comply with certain reasonable chemical and bacteriological standards. This would aid the inspectors in enforcing good dairy methods. Pasteurization then must not be used as an excuse to bolster up milk unfit for home consumption. To insure this end, the health officer should have authority to condemn and destroy bad milk, whether or not pasteurization is practised.—M. J. Rosenau, in *Annals of Medical Practice.*

THE SANITARY REGENERATION OF SAN FRANCISCO

N. K. FOSTER, M.D.
SACRAMENTO, CAL.

Early in the morning of April 18, 1906, San Francisco was awakened by a severe shock of earthquake which, breaking the electric wires, set fires in many parts of the city. The same shock which set the fires destroyed the means of defense by breaking the water-mains, and the city was unprotected against the fury of the flames which raged uncontrolled for three days and nights. Few, if any, of the great fires of the world have equaled it in extent of property damage. Picture a city, rich, substantial, with a beauty and grandeur peculiar to itself, covering hills and valleys, with vast mercantile and manufacturing industries, changed in three days to a pile of broken brick and twisted girders, 2,560 acres of ruins, 28,188 houses destroyed, 275,000 people homeless, $350,000,000 property values wiped out of existence!

It was a time that tried men's souls; and never was American pluck put more fully to the test and never its superior quality more fully proved. There was hardly a person in the city who was not stricken to a greater or less degree; and thousands on thousands had not only the savings of a lifetime wiped out, but all immediate chance to work for a living destroyed. There was hardly food enough left in the city for a full meal for the inhabitants, most of whom were sleeping in the parks and vacant lots. The supply of water was very limited, and no fires were allowed in houses, so all cooking had to be done in the open air. The sewers were broken and clogged, the means of collecting garbage destroyed, and conditions were favorable for the spread of zymotic disease.

The conditions confronting the health authorities were serious but were fully appreciated, and long before the fire was out a complete organization was installed, composed of the medical service of the United States Army, the State Board of Health, and the City Health Department. The city was divided into districts, and over each was placed a local physician who was skilled as a leader as well as in his chosen work. He selected his own assistants from among the medical men of the city. Here let me give a word of tribute to the doctors of San Francisco. No class or profession was hurt so badly. Libraries, instruments, accounts and practice were all swept away and many of those fortunate enough to own their homes lost them also. Without price or any consideration they gave their time and skill not only to aid the sick and injured, but to save the city from a fate which seemed almost inevitable. The work they did was not spectacular, but its value to the city was none the less great and can never be properly appreciated. They went from house to house and camp to camp, inspecting, regulating, instructing, and, where it was necessary, backed by the strong arm of popular consent, enforcing sanitary measures. Connections with broken sewers were closed, water was boiled, body discharge buried, waste brought to sidewalks, and pollution of the surface of the ground forbidden. As a result of these measures there was practically no sickness in the city during the few weeks immediately succeeding the fire.

The people were largely living in the open air, eating simple, plain and wholesome food, and the waste matter was reasonably well destroyed. Business activities were at a standstill and personal attention was given to sani-

tary conditions. When, however, the reconstruction began and the sanitary inspection, which had been strict, was relaxed, typhoid and other zymotic diseases became prevalent and for several months the mortality and morbidity rates were above the normal, although at no time sufficient to cause alarm. Conditions, however, were favorable to the spread of disease and especially one like plague, which is carried by vermin. The sewers were broken and afforded an excellent means of communication for the rats from one part of the city to another. The ruins of the city gave ample hiding-place and the remains of lunches from thousands of workingmen gave sufficient food and excellent means for propagation.

The plague epidemic of 1900-1904 had been wiped out and for three years no case had developed, so when in May, 1907, one year after the fire, a case was found on the tug *Wizard* it was thought to be a fresh importation, and there is yet no certainty that it was not. No great uneasiness was felt until August, when it broke out with fury and soon appeared in many parts of the city. The exact source of this infection will never be known, but, no matter whether it was a lingering infection from the former outbreak or a fresh infection, the conditions were excellent for the spread. Thousands of refugees were living in tents and shacks built of any material that would give the slight protection needed from the weather. These habitations were without sanitary conveniences and were built close to the ground. The city was full of stables where the accumulated refuse gave a splendid home for vermin. Old board walks on streets and in back yards and rubbish in basements of undestroyed parts of the city was as common as in other cities. Slaughter-houses in the suburbs were pestilential holes. The sewers were broken and the garbage poorly collected. Rats were plentiful, and a widespread epidemic prevailed among them with nothing to keep them from a close contact with the people. With these conditions it is no wonder that those who had had to deal with the former epidemic of plague stood aghast at the prospect and trembled for the future, especially as plague cases were multiplying rapidly, for in September there were fifty-five cases in the city. It looked gloomy for San Francisco. The loss by the fire and the tremendous expense following it had almost broken the city treasury; and the losses in public buildings had left the state in little better condition; so that there was not the money necessary at the command of the health authorities to conduct the campaign the conditions demanded.

More than anything else was needed a man skilled in combating great epidemics and backed by a power that could make itself felt. Aid was asked of the United States Public Health and Marine-Hospital Service, and Dr. Rupert Blue of that service was assigned to the work. His experience with the former epidemic, when he had carefully studied the rat and its connection with the disease made him the logical man for the place, and his natural qualities as a leader and diplomat added materially to his qualifications. He began at once to arrange for a sanitary battle such as probably had never before been fought. For his executive officer he chose Past Assistant-Surgeon W. Colby Rucker of the same service, a man in every sense of the word capable, honest, enthusiastic, loyal and a thorough organizer. Together they constituted a force which inspired confidence in all with whom they came in contact and proved themselves a credit to their service. Both state and city authorities recognized Dr. Blue as the leader, gave him their hearty support and looked to him for results; and their confidence was not misplaced.

A campaign of general sanitation was laid out, the city divided into districts, each under an able leader, and daily reports made to headquarters. The work to be done was to make the city sanitary. To do this rats must be destroyed, their breeding-places broken up, their food-supply stopped; to use the expression of Dr. Blue it was necessary to "build them out." Ordinances were passed by the supervisors supporting this policy and orders were issued by the State Board of Health whenever it was possible to strengthen the hands of the department. The city was spending $30,000 per month besides the aid given by state and nation, but little progress seemed to be made. The cooperation of the people was needed; and it is to the credit of the organized medical profession of California that this was secured. In January a meeting was called by the Council of the State Medical Society, to which were invited a large number of business men. A few responded and became so impressed with the danger that a resolution was passed asking the mayor to appoint a Citizens' Health Committee of twenty-five. This he did and their work was of the greatest aid in saving the city. The whole city was awakened and soon every man employing help was calling his employés together and having them addressed on the subject of sanitation; and every one was made a committee to see that his own and neighbors' premises were clean. The women and women's clubs became active and efficient agents in the work; and in a short time the whole community was more deeply stirred in a move for better sanitary surroundings than any other large community had ever been.

While the enthusiasm among the people for better sanitary conditions was doing wonders in the way of cleaning up which could not have been accomplished by the organized health authorities for several hundred thousand dollars, it was evident that more systematic work must be done to restroy rats, and the Citizens' Health Committee promptly raised over $175,000, which was expended largely in the warfare on rats. Each household was required by law to have a closely covered metallic garbage-can, and the law was strictly enforced. Stables were made rat-proof, and only such persons acceptable to the officer in charge were allowed to move the manure out of the city—this to prevent the spread of infected rats and to force the rat-proofing of the stable, it being cheaper to do this than to dispose of the waste by other means. Old wooden sidewalks were torn up, shacks destroyed, piles of rubbish in basements and yards cleaned out, openings to broken sewers closed, and lumber piled so that cats could get beneath. In fact, all hiding-places and runways of the rodent were disturbed and his life made miserable and short with trap and poison. In fifteen months 350,837 of the rats were caught, besides the vast number dying of poison and never found.

In a few short months conditions had entirely changed and San Francisco stood forth the cleanest large city in the country; 1,025,977 premises had been inspected; 11,342 houses disinfected and 1,713 destroyed; 4,291,000 square feet of concrete basement and area floor had been laid, and 1,190,000 in stables; 3,967 stables had been concreted and 903 otherwise made rat-proof; 5,000 chicken-yards had been made rat-proof and 11,000 vacated; and it is estimated that 2,000,000 rats were slaughtered.

There were still many sores and scars from the recent burn, but as a rule they were well cared for and clean. The streets were littered with building material and in many places broken, but that is no measure of a city's

sanitary condition. The streets and front yards may be clean, the houses bright with fresh paint, but the back yards and basements filthy. The front is no more a criterion of a city's cleanliness than is the outer garment of a person's. The condition of basements, stables and backyards, the use of garbage cans and proper collection of garbage, the absence of rubbish and the rat-proofing of buildings are the true measures of its cleanliness.

The plague has been a costly lesson to California, but she has smilingly paid the price and is profiting by it in a low death and morbidity rate. The spirit for better sanitation was not confined to San Francisco, but spread to other cities, and hardly one but bettered its condition; and the extent of betterment can be read by comparing the death rate of the year following with that of the year before. A campaign, the outgrowth of the one in the city, is still going on throughout the state in a way never before tried. A car with models illustrative of sanitary conditions, showing causes of disease and methods of avoiding, eradicating and curing, has been fitted up by the State Board of Health. The car was furnished free by the Southern Pacific Railroad Company and with its lecturers and attendants is being hauled free of charge by all the railroads of the state. This could hardly have been possible before the plague, but now it is gladly—yes, enthusiastically—done and the resulting good is beyond measure. We may have other cases of plague; situated, as we are, at the gateway through which so much immigration and business with the far East must come. It would be strange if we did not; but we know it, its cause and its means of spread and are on guard. We have fought the first great battle for the country and have won. The second may be on us, but it is just as likely to be on some of you on the Atlantic coast. It has spread with steady strides in a few short years to almost every country on earth and you are not far removed by water from some of its strongholds; it behooves you to take heed and learn from our experience and begin the fight before it is manifest. Dream not that you will catch the first case and check it then. Before you find human cases you will have a thoroughly infected rat population. Your only safety is in the extermination of that enemy of mankind.

This is not such a hopeless task as it may seem. If each householder will but look after his own premises and destroy breeding-places and feeding-ground the work is done. The value of a popular sentiment that requires that each person keep his holdings clean was strongly impressed on us. This sentiment needs, however, in the case of stress to be properly directed and in this a national department with its officers outside political machinations, trained to lead, educated for the work, with no other business interests to distract, is preeminently the best.

Paraplegia in the Aged.—Lhermitte discusses the cerebral, spinal cord or muscular origin of paraplegia in the aged and the disturbances in gait which result from mere functional incapacity. The latter depend mainly on the emotional reactions, the dread of the infirmities of age and the tendency to stay in bed on the slightest pretext. The idea of its being impossible to walk becomes more and more settled in the old man's mind, especially as his will power is growing constantly weaker. In bed he can move his muscles, but when standing seems to be unable to take a step. He can be encouraged to walk, leaning on a cane or attendant, and may cover miles with this aid, but gives up at once if deprived of this support. This form of paraplegia may be curable as the patient is re-educated to walk, and it should be eliminated before considering the organic forms. His article was published in the *Bull. de l'Internat, December*, 1908.

THE FRENCH GOVERNMENT TOBACCO FACTORY AT ISSY, NEAR PARIS

HYGIENIC NOTES *

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CINCINNATI

While in Paris, France, during the summer of 1908, for the purpose of making some investigations in the department of hygiene, I received permission to visit the government tobacco factory at Issy les Moulineaux, near Paris.

I wanted to make some investigations in regard to the effects of tobacco on the eyes of the employés of the factory, along the line of similar investigation which I have made in the tobacco factories of America, but this permission was not granted; I was permitted, however, to examine into the sanitary condition of the establishment, and was afforded every opportunity in this direction by the courteous director of the factory. The following are some of my findings:

The large tobacco factory, situated at Issy les Moulineaux, a short distance beyond the fortifications of Paris, covers several acres of ground, and is about the largest factory of its kind in France. It employs 1,200 persons, of whom 1,000 are women and 200 are men. The structure is an immense one, built of stone and brick, and was finished in 1904, when the old establishment in Paris was removed to this location. It is up to date in all its appointments, has the latest modern machinery, and turns out only cigars, cigarettes, and tobacco for pipes. In the first division the machinery is all of French make. It turns out cigars and tobacco for pipes. There are some very ingenious machines there for compressing and packing tobacco into forty-gram packages (a little over an ounce). A machine will turn out 1,300 of these packages in an hour.

All the floors contain cuspidors with a disinfectant substance, and the rooms are kept scrupulously clean. In one room there is some American machinery that is made in London and Dresden. All the tobacco dust from the machines is conducted through pipes to a flue and escapes through a chimney in the roof, and in this way very little dust is to be found in the work-rooms, and there is comparatively little smell of tobacco. There are twelve large work-rooms in the establishment, each 40 meters long and 14 meters (about 130 by 45 feet) wide, with immense high ceilings. Besides these there are smaller work-rooms. The men are employed largely to do the heavy work, while most of the skilled work in turning out cigars and cigarettes is done by the women. The superintendent informed me that the women are more dextrous in the use of their fingers than the men, and hence are given the preference in this kind of work. I found some Cincinnati machinery in one of the rooms for turning out cigarettes. This room was called the American room.

Besides the rooms for French tobacco there is a large room devoted to American tobacco, labeled "Ohio," "Maryland," "Kentucky," etc. The colors of these grades of tobacco are about twelve in number. Each woman employed in packing the cigars in boxes has her number on the box, so that in case the boxes are not packed properly the superintendent can tell who is at fault. Most of the employés go home for dinner at noon; for those who remain there is a pantry and kitchen

*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

for warming their food. There is a library in the establishment, baths, an emergency hospital for those who may be injured, and a dispensary with a full supply of drugs for the factory doctor who visits the establishment daily. All the water used for drinking purposes is sterilized by machinery. There is a good-sized nursery (crèche) for the babies that the working women may bring with them, with a kitchen for preparing food, bath-tubs, closets for toilet, etc.

The majority of the women here were much more mature-looking in appearance than those I saw in the factories in America. I saw no very young girls, and, of course, no boys. Smoking is against the rules in the establishment. The women did not present the anemic appearance that one notices among those employed in our American tobacco factories. The men showed no symptoms of tobacco infection that I could discern; and the medical director says that tobacco amblyopia rarely occurs among them. They do not smoke to the extent that our American workmen do, and, then, the cigars are lighter, and a good many cigarettes are used instead of the heavy cigars that our people smoke.

The sanitary condition of this factory is as good as that of any that I have ever visited. There was no crowding in the rooms; there was plenty of breathing space, and the employés all looked healthy.

All the tobacco factories are government property, and they yield an enormous revenue. For the year 1907 the total number of employés in the tobacco manufactories of France was 15,171; of this number, 13,239 were females and 1,932 were males. There are twenty of these manufactories in France situated in the following cities: Bordeaux, Châteauroux, Dieppe, Havre, Le-Mans, Lille, Limoges, Lyons, Marseilles, Morlaix, Nancy, Nantes, Nice, Orleans, Pantin, Issy les Moulineaux, Reuilly, Riom, Tonneins and Toulouse. All the employés, both men and women, are eligible for retirement at the age of sixty-five, when they are pensioned by the government. By a law of March 22, 1905, the male employés are appointed from the soldiers who have served for at least four years under the French flag; consequently they are at least twenty-five years of age before they are employed in the factories. Foreigners are not employed in these factories; occasionally, however, exceptions are made, and foreigners are appointed; especially in the case of French women who marry foreigners, for the women thence by virtue of such marriages become foreigners, according to the French law. If they are employed before such marriages, they are retained in the factories under the classification of foreign employés. These marriages occur mostly at Nice, Toulouse, etc., the seaport towns of France. Women are not employed if they are beyond twenty-eight years of age, and practically the minimum age is eighteen years. That disgusting practice of chewing tobacco, too prevalent among our Americans, does not exist among Frenchmen.

A medical director who resides in Paris is at the head of the medical department of these tobacco factories, as well as the other factories of the state. There are local physicians attached to the various factories, whose duty it is to look after the hygienic condition of the institution, as well as to care for any of the employés who may be injured while on duty. These physicians are all under the supervision of the medical director at Paris.

As will be seen, there are no minors employed in these French tobacco factories. This is as it should be. They should also be excluded from our tobacco factories in America, and for this purpose we should have government supervision of our tobacco factories so as to have uniform laws enacted forbidding their employment. As it is now, each state makes its own laws governing the matter, and they are not uniform and very often they are not enforced. I know that in my city there are a large number of boys and girls employed in these factories, and I suppose it is the same in the tobacco factories of other cities. They are employed on the score of cheapness, as they command less wages than the adult. In my investigations made in our factories I found that nearly all of the boys employed there smoked to a greater or less extent. The environment of the factory seemed to stimulate this habit.

In the minor the use of tobacco in any form is highly injurious, interfering with the normal development of the mental powers, producing various nervous disturbances, especially nervous disturbances of the heart, as manifested by palpitation, weakness, irregular action, irritability and anginal pains.

The action of tobacco on the heart is well set forth in the Lettsomian Lecture by J. Mitchell Bruce:[1]

> In young men whose circulation is still structurally sound, the uncomplicated effects of tobacco, as presented clinically are palpitation in every instance; a sense of irregular action, poststernal oppression and pain in half the cases; and in one out of every eight either angina or uncomfortable sensations in the left arm; faintness or actual faints in one-third of the cases; giddiness and a feeling of impending death in a smaller proportion. As to physical signs, the heart proves of ordinary size in 50 per cent. of the cases, in a few slightly enlarged; the precordial impulse is very weak, but occasionally increased in force and frequently, and likely as not to be irregular; the pulse tension, with insignificant exceptions, is low. Of twenty patients, not one presented a cardiac murmur beyond a weak mitral systolic bruit, variable with posture and cubitus.

That the habitual use of the tobacco by the young causes stunting of the physical and mental growth is set forth in the observations of Seavers, of Yale University, who has for years studied the growth of students during their four years' time at the university. He observed that those who do not use tobacco increase in weight, height, chest girth and lung capacity more than those who do use it. He states that Hitchcock, of Amherst, has made like observations.

On those who are more advanced in life, from forty upward, tobacco seems to spend its force more particularly on the eyes, producing a gradual but progressive reduction of the visual power, together with a confounding of colors for central vision. Out of something like 3,000 cases examined by me, during a period of ten years, in the tobacco factories of Cincinnati, more or less disturbance was noticed in about 5 per cent. of the cases among the male employés who used tobacco to excess. The females were exempt.

The deleterious effects of tobacco on the system in general, or on the eyes, is due, as we all know, to the presence of a poisonous ingredient called nicotine. This oily, colorless fluid diffuses itself into the blood with as much rapidity as prussic acid, and a poisonous dose has been known to kill an adult in three minutes. Nicotine when heated to 250 degrees becomes volatilized and decomposed, but if watery vapor is present volatilization takes place without decomposition. When dry tobacco is smoked, the greater part of the nicotine is decomposed by the heat and passes off with the smoke. The more moist the tobacco—and the cheaper grades are usually damp—the more this is retarded. The cheaper grades of tobacco contain more nicotine than the more

1. Bruce, J. M.: Brit. Med. Jour., March 23, 1901.

expensive ones, and consequently are more injurious to the consumers. The tobacco used for chewing purposes is usually very rich in nicotine. The action of nicotine on the blood is an interesting one; it first produces a temporary increase in the blood pressure; this is followed by a more prolonged reduction of the pressure, and this again is followed by an increase in the blood pressure (Tschirwinsky).

On the blood corpuscles themselves nicotine exerts a marked influence. The red corpuscles become serrated in appearance, and when the drug is administered in large doses partial disintegration of the corpuscles takes place. In the experiment of Hare they are shown to arrange themselves in columns, instead of in rouleaux, in such a way that the edge of one corpuscle touches the edge of its neighbor. If the poison is added to the specimen under the microscope, the red corpuscles appear to disintegrate, and their diameter becomes smaller, whereby for the most part their concavity is diminished and they become colorless and transparent. Vas has shown that in chronic tobacco-poisoning the number of red corpuscles is reduced, whereas the number of white corpuscles is increased. The action of the poison is particularly marked on the white corpuscles. Their motion, which on the artificially warmed slide continues, is, as the Hare experiments show, immediately retarded by the addition of nicotine; the blood corpuscle, on its part, breaks up into eight or more divisions, which from time to time separate and swim in the fluid independently of each other. These divisions are round in appearance and bear a strong resemblance to the red corpuscles. The globular shape which the white corpuscles often assume does not appear after the addition of nicotine, but the protoplasm remains without change in the condition in which it appeared when motion was suspended.

Nicotine exerts a direct action on the oxyhemoglobin, and it is probable that it is in the reduction of the latter that nicotine acts as a causative agent in the production of asphyxia. The disintegration of the red corpuscles described above points to the correctness of this conclusion; therefore, death following nicotine poisoning is not simply in consequence of the usual asphyxia from depression of the respiratory center *per se,* but is due to the fact that the hemoglobin fails to carry oxygen to the various parts of the body.

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ABSTRACT OF DISCUSSION

DR. W. FORREST DUTTON, Walker's Mills, Pa.: I have used the Riva Rocci instrument a good deal in recording these cases. I have not examined a large number, but I have examined enough to know that smoking, as a rule, raises blood-pressure and keeps it high for a considerable time. It would seem to me that the men and women working in a tobacco factory side by side would be affected in the same way; but this paper states that the men were affected by this particular eye affection and the women were not affected. I should like to have some explanation of that phenomenon for my own edification.

DR. FRANCIS DOWLING, Cincinnati: I found, in my examinations in the tobacco factories, that the air of the factories does not produce either a toxic infection of the eyes or of the system in general of the employés. It was only in those who used tobacco in smoking or chewing that toxic symptoms were manifested. The reason the women are exempt is that they do not usually smoke or chew tobacco. I found that some of the men, on the other hand, smoked as many as 18 or 20 cigars a day, and the degree of tobacco infection, especially of the eyes, was usually proportionate to the amount of tobacco consumed.

FACTORS WHICH CONTRIBUTE TO A REDUCTION IN MORTALITY IN ABDOMINAL SURGERY *

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PITTSBURG

In submitting this subject for discussion, I do not hope to offer anything new, but desire merely to present an outline, an approach to which has served to reduce my mortality and to improve my results in other respects.

In offering surgical relief in an individual instance, we should be prepared to give the following reasonable and adequate assurance:

First.—That the risk to life, as this particular operation is to be done, is not out of proportion to the gravity of the disease. What chiefly concerns a patient undergoing operation is the risk to which she is subjected by the given surgeon with the facilities at his command, and not the death rate from this particular operation as done by the masters of surgery. In surgery, as in every other sphere of human endeavor, the element of personal equation largely determines results—one operator will habitually have a low mortality, another will achieve an occasional brilliant result, while the work of still another will always be mediocre. The patient who submits to an abdominal operation stakes her life on the ability of the operator to command proper facilities and to do consistently high-grade work.

Second.—That if the patient recovers from operation, there should be no essential reason why she should not have the desired relief—i. e., that the patient should not be subjected to the risk of a grave operation if she can not be cured of the disease, as is the case in advanced cancer. It would be unwise, also, to remove a uterus for fibroid tumor, if coincident and grave cardiac, pulmonary or renal disease would almost certainly cause permanent invalidism, and if the depression incident to operation might easily prove fatal.

Third.—That the conditions under which operation is to be done should be such that no other combination of circumstances could offer less risk to life, or a greater degree of security against postoperative complications.

Fourth.—That in removing one type of pathology we may be able to avoid substituting another type which might readily entail greater discomfort and danger than that removed. A patient who exchanges a retroverted uterus for an incisional hernia or serious intestinal adhesions can scarcely be said to have profited by the exchange. Such unfortunate results will undoubtedly be encountered occasionally by the most careful, skilful, earnest and successful surgeons. If such occurrences are rare, it may be wise for a patient to take the slight risk—but if in individual hands they occur with marked regularity the risk under such conditions is manifestly out of proportion to the benefit which may be reasonably expected.

Fifth.—That no other less onorous kind of treatment could effect the desired result in a more satisfactory way. For example, salpingitis and pelvic peritonitis often may be completely cured by a relatively short period of rest and medical treatment. Precipitate removal of diseased organs under such conditions would be manifestly unwise. It often happens that a well-

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

fitting pessary completely relieves the discomfort due to uterine displacements; on the other hand, one often finds the perineum so badly damaged that no type of pessary can be retained. Under these conditions safe surgical correction is desirable.

Sixth.—That the benefit to be derived from operation should reasonably be expected to compensate the patient fully for the risk to life, discomfort, loss of time, inconvenience, degree and duration of disability, and the cost of operation and still leave a decided balance of benefit to the patient's credit. The simplicity of the procedure and the success of the operator in the surroundings and under the conditions which exist should be such as to afford adequate warrant for the belief that a high degree of success will attend this particular operation on this particular patient.

Just in proportion as a surgeon is accurate in these estimates will his judgment be good, his counsel wise, and his results satisfactory.

I am fully aware that such restrictions imply a degree of skill and judgment that it is difficult to acquire. Yet the moral law and statutes confer on us broad privileges in handling human lives provided we recognize and respect the sacred trust such privileges entail. If we respect those laws we must realize that many factors contribute to a high percentage of recovery with ideal convalescence. Chief among them are a due appreciation of the functional value of anatomic structures, a comprehensive knowledge of the principles of pathology, the recognition and correct interpretation of gross pathologic lesions in the living subject, an intimate knowledge of the habits and accidents common to the structures with which we come in contact, a correct estimate of the patient's reserve strength, a wise choice of time and type of operation, a rigid aseptic technic, a considerable degree of manipulative dexterity and such *esprit de corps* among one's group of coworkers as will permit of operative speed and precision.

It is clear that to accomplish these aims necessitates a fortunate combination of time, adequate facilities, proper training, special aptitude, and assiduous application. Yet they are the requisites of uniform success and as such constitute the most important factors in the prophylaxis of postoperative morbidity and in the reduction of mortalty.

A comprehensive knowledge of the fundamental principles of pathology is essential to a correct interpretation of a given morbid process; to a forecast of its further course; and to a fair estimate of its present and future effect on the patient in question.

ACCURATE KNOWLEDGE OF THE NATURE, EXTENT AND TREND OF DISEASE

While it is practically impossible to make an exact diagnosis in every case before opening the abdomen, the careful and well-trained surgeon should be sure of the intra-abdominal condition in from 90 to 95 per cent. of cases. In estimating the needs of the individual patient it is not sufficient merely to know the nature of the disease for which relief is sought. One should know as well the influence it is having on the host, and also the extent to which it is modified by other pathologic processes affecting the individual. Should there be no other associated disease, it is still necessary to have exact knowledge regarding the lesion under consideration. The several stages through which the pathologic process passes, and the varying influence it exerts, make such knowledge essential to a wise handling of the disease.

Every type of pathologic process affecting the pelvic organs affords striking and frequent examples of the foregoing propositions. For instance, one's conception of early carcinoma of the fundus of the uterus which has scarcely invaded the muscular wall is entirely different from that of advanced adenocarcinoma of the cervix which quickly invades the parametrium and gives distant metastatic involvement. The treatment based on this conception differs quite as widely. Immediate hysterectomy in the first instance may be accomplished with little risk and is exceedingly likely to yield a radical cure. In our present state of knowledge one could hardly excuse a hysterectomy for advanced adenocarcinoma of the cervix and surrounding structures which would be attended by great risk to life and scarcely a possibility of even temporary relief.

One familiar with the progress and clinical aspect of varying types of uterine fibroids should reasonably expect to forecast the future course of events in an individual instance with the same degree of precision that the astute clinician anticipates complications in the course of pneumonia, diabetes, nephritis, arteriosclerosis, etc. For instance, if a patient of 37 or over has a growing interstitial or submucous fibroid, and for a year or more has lost an increasing quantity of blood, it is not necessary to permit the development of marked anemia with cardiac and vascular changes, nephritis, etc., before realizing that she represents a clinical type, tending inevitably to that end. On the other hand, a woman of like age or younger, with a small inoffensive subserous fibroid need not, at some risk, forfeit her chance of becoming a mother, by unnecessary haste in operation. A mere reference to such contrast of cases might seem out of place in this presence, and yet in my experience fully 40 per cent. of fibroids that have come to operation have shown some form of degeneration of the tumor, or serious cardiac, vascular or nephritic changes. Manifestly the time of election for operation comes before there is such debility as to retard convalescence.

The need for precise and comprehensive diagnosis is especially great in dealing with inflammatory affections of the genital tract—thus the outcome and hence the treatment may differ widely in such pathologic processes as true cellulitis with dense inflammatory exudate, on the one hand, and salpingitis, on the other. In each of these affections the best course to pursue may vary materially with the duration, extent and trend of the disease.

Equally wide differences in clinical aspects and treatment may arise in the course of such affections as ovarian cysts and tubal pregnancy.

EXACT DETERMINATION OF THE PATIENT'S RESERVE STRENGTH

The most frequent, the most perplexing and at the same time the most important decision the surgeon is called on to make relates to the margin of reserve strength possessed by the individual patient and the extent to which that margin will be encroached on by the method of obtaining relief. He must recognize the fact that a definite percentage of reserve strength is essential to the absolute needs of existence. It is evident that the energy that may with safety be dissipated by operation must come from this margin of reserve strength above the absolute needs of existence. The risk of operation increases just in proportion as this margin is encroached on. It is important that surgeons should analyze the composite picture of reserve strength and strive

diligently to reduce it to an exact analysis. It is clear that this margin depends on the functional value of all the vital organs, including the musculature.

It is usually possible to determine the functional value of each of these several structures by well-known clinical methods. To eliminate the element of chance it is essential that such clinical methods should be habitually and systematically employed. There would seem to be, however, a small percentage of cases in which the available tests are inadequate, notably those in which sudden death occurs in the course of what appears to be a perfectly normal convalescence, with or without evident fatal embolism; postoperative nephritis occurring in what appeared to be previously healthy kidneys; and rare evidences of death due to acidosis, the urine having previously been free from sugar, diacetic acid, and other abnormal constituents.

JUDICIOUS ADAPTATION OF TIME AND TYPE OF OPERATION TO INDIVIDUAL NEEDS

The wise adaptation of the time and type of operation to individual needs is essential to uniform success. It demands prompt decision and constitutes the severest test to which a surgeon's judgment is put.

It is not always easy to refrain from surgical intervention when a patient lies critically ill and is apparently growing worse from an intra-abdominal affection which will clearly demand operation at some stage of its existence. Yet if we except accidents and injuries to hollow viscera—strangulated hernia, perforation, etc.—it seems clear to me that an increasing percentage of so-called emergency work can be reduced to the safer planes of incomplete and elective surgery. In all surgery there is scarcely a more hazardous procedure than the removal of a large universally adherent, infected ovarian cyst at the height of an acute and exhausting illness. It often happens, however, that evacuation renders subsequent removal simple and safe. At times such an emergency as torsion of the pedicle of an ovarian cyst is rendered more serious by a severe complicating nephritis. To withhold surgical relief may seem a hazardous procedure and yet it is often surprising to see the marked improvement which follows delay and restored renal activity. It occasionally happens that the completion of an operation would probably prove fatal, whereas temporary failure may later be followed by safe operation.

When pronounced anemia and cardiac and renal complications accompany uterine fibroids the most gratifying results are often attendant on a few weeks of preliminary treatment. A number of patients who had for some months been going progressively down until they were almost exhausted have improved sufficiently to permit of safe hysterectomy and speedy convalescence, whereas more precipitate operation might readily have proved fatal.

My conviction daily grows more firm that by converting acute inflammatory affections of pelvic structures into aseptic lesions the need for operation and the postoperative morbidity and mortality may be greatly reduced. This conviction is based on an increasing number of complete recoveries without operation and a series of 475 consecutive abdominal sections for inflammatory lesions of tubal origin with only four deaths.

When operation is done while inflammatory exudate still infiltrates intestinal walls, injury with subsequent fecal fistula, adhesions and intestinal obstruction, are far more common than when internal sterilization of pus (tubes) is practiced. In the series of cases just referred to (475 sections for quiescent inflammatory products) there have been only two cases of partial intestinal obstruction. One of these was subsequently relieved by operation. The other did not require it. These four complications occurred in cases in which operation was done relatively soon after the acute attack had subsided—that is, just as the last of the exudate was being absorbed. During the period in which these sections were being done for inflammatory lesions something more than a thousand sections were done for other types of pathology without a single fecal fistula, and, so far as I know, with only one case of partial intestinal obstruction, which occurred two years later.

A GROUP OF COMPETENT COWORKERS

I consider the proper organization of a surgical service an important factor in the reduction of mortality. The method which seems entirely satisfactory in my service at the Allegheny General Hospital consists in dividing the work into several departments and having a corps of competent and continuous workers in each. The corps of workers consists of:

1. A thoroughly reliable and efficient first assistant is, I believe, essential to quick, precise work and uniform success. Dr. S. A. Chalfant, who was anesthetist for a considerable period of time, has occupied the position of first assistant for a number of years.

2. A skilled anesthetist, on salary, who, in addition to giving all anesthetics, is responsible for a typewritten record, embodying all details regarding diagnosis, operation, pathologic lesions found at operation and a description of specimens removed. It is his further duty to keep tabulated records of postoperative facts in any way due to the administration of the anesthetic.

3. A pathologic department consisting of an expert pathologist cooperating with the pathologist of the institution and having a competent salaried assistant. Among other things, it is customary to have routine examinations of blood at stated intervals before and after operation, and at other times if occasion arises; to examine the urine before operation and each 24 hours thereafter for two or three days, or as long as any abnormal constituents are found. The routine urinalysis embraces among other things a quantitative estimate of the acetone bodies both before and after operation; systematic bacteriologic investigations and histologic examinations of specimens and discharges are made.

4. The Nursing Corps.—Much depends on the proper organization of one's corps of nurses. A group of intelligent, earnest, systematic, diligent nurses, who take a deep personal interest in promoting the comfort, security and welfare of each patient, contributes much to the efficiency of one's work. The arrangement we have had at the Allegheny General Hospital has proved satisfactory in method and personnel. (a) There are efficient graduate head nurses in charge of the private and ward floors. They have the usual group of undergraduates. (b) An unusually competent graduate nurse has for a number of years been in charge of the operating room and of the preparation of all dressings used therein. She also prepares the field of operation in clean cases. She has two undergraduate assistants. (3) A plan which I can not commend too highly is the employment of a continuous group of postoperative nurses chosen because of especial aptitude and fitness for this particular type of work. Each patient subjected to abdominal section should be under the care of such a competent graduate day and night nurse for the first 48 hours, or as much longer as the patient's condition may demand. They add much to the comfort, and, by being

skilled and alert, to the safety of patients. Private patients gladly pay for this service—the hospital supplies it to charity patients.

MINIMUM AMOUNT OF ANESTHETIC

Undoubtedly one of the most important advances in major surgery during the last century was the introduction of anesthetics. During the last decade one of the most important advances has been the uniform and progressive tendency to reduce the quantity of anesthetic. This has resulted from a better understanding of the frequency, nature and extent of the deleterious effects they cause. It has been accomplished by the employment of skilled anesthetists, by the adoption of better methods of administration and by such improvement of team work in operative technic as reduces the duration of operation.

While fully recognizing the extent of our indebtedness for anesthetics, and to those who introduced them, we must not lose sight of the fact that, while doing immense good, anesthetics usually cause distinctly harmful results. These results are expressed in a definite clinical picture which is always present but in varying degrees. One almost invariably sees marked muscular depression and interference with glandular secretion as evidenced by parched lips, intense thirst, usually nausea and vomiting, and a reduced quantity of urine.

When this disturbance is more marked the air passages may become affected, the circulatory system depressed, metabolic disturbances occur, and hepatic and renal functions may be markedly or even seriously vitiated.

The more thoroughly one investigates these subjects by careful observation of symptoms and systematic preoperative and postoperative analysis of secretions, the more fully does one realize that the anesthetic is perhaps the most important factor in determining operative mortality. The truth of this proposition has repeatedly been demonstrated to my entire satisfaction by contrasting the postoperative condition of two classes of patients: The one class embraces such operations as appendectomy, cholelithiasis, hysterectomy for fibroid, etc., on good subjects under ether anesthesia. The other class includes a number of patients operated on for gallstones, large adherent ovarian cysts, appendicitis, etc., who were also the subjects of such grave cardiac, renal or pulmonary disease as positively contraindicated the use of a general anesthetic. The observation has been so common as to be almost universal, that in the grave cases without anesthesia the patients were some hours later, in much better condition than the patients in the simpler cases to whom ether was given, and that convalescence was almost uniformly more smooth and satisfactory. I would emphasize the fact that this striking difference was in favor of the patients who would almost certainly have died had a general anesthetic been administered.

The method we have found most satisfactory has been the continuous services of a skilled and salaried anesthetist who uses the open or drop method, with the coincident administration of oxygen, using a soft catheter introduced through the nose. The use of oxygen in this way has, among other things, almost done away with nausea and vomiting.

I believe that a full appreciation of the possible harm that might result from the administration of anesthetics, and a careful study of the circulatory, respiratory and urinary tracts before operation, has contributed no little to the maintenance of a low operative mortality in my service. It has also done much to reduce the frequency and severity of such postoperative complications as are attributable to this cause. Pneumonia and bronchitis are exceedingly rare; shock and other circulatory disturbances are almost never seen, and urinary complications are much less frequent and serious than formerly. There have been only 13 deaths (1.86 per cent. mortality) in the last 700 consecutive laparotomies.

RIGID ASEPTIC TECHNIC

A rigid aseptic technic is unquestionably the foundation on which all modern surgery rests. Without it there can be no uniform success. Without it the certainty, nature and extent of postoperative complications is such as to render elective surgery rarely, if ever, justifiable. The development of a rigid aseptic technic demands that the surgeon, his assistants and all others who come in contact with the field of operation during the period of preparation, operation or postoperative care, shall absolutely avoid contact with any wound, dressing, receptacle, or other structure or article which is not surgically clean. This implies the use of sterile rubber gloves in all physical examinations of patients, presumably free from open foci of infection. It implies even more rigid care in examinations made in the presence of discharges from open wounds. Uniform aseptic success demands that such precautions be taken every day in the year; so that the most important instruments concerned in operation, the hands and their covering, shall remain as nearly aseptic as possible. The hands having been kept continuously clean, the risk of infection is further reduced by the use of well-fitting rubber gloves of good fiber. These principles apply with equal force to the operator, his assistants, the nurses in the operating room and those who have the care of the field of operation. Such a rigid aseptic technic forces on us recognition of the undoubted fact that hospitals are clearing houses for all types of infection. With rigid technic, proper segregation of patients, and such division of labor as precludes the intermingling of caretakers of septic and clean patients, it is easily possible to do elective work with uniform aseptic results. We should never lose sight of the fact, however, that when the least relaxation occurs the conditions are analogous to those which exist when a powder mill and a match factory are operating under a single roof.

SPEED WITH PRECISION

If a surgeon is called on to operate at a distance, in a definite and considerable percentage of cases, he will lack essential facts which should guide him in deciding for or against operation, the type of procedure to be employed, and the time of election and the conditions under which it should be done. If he operates under such conditions, the death rate will be unnecessarily high. If he declines to operate, an embarrassing situation arises.

I can not too strongly commend the wisdom of operating habitually in one's accustomed surroundings. By doing so and exercising constant effort to develop systematic methods, it becomes possible to have the duties of one's coworkers proceed with clockwork precision.

With such a well-organized corps of workers, the division of labor may reach such a degree of efficiency that the operator may concentrate his entire attention on his individual work—arriving with unnecessary interruption at prompt decision regarding the fate and function of structures, the type of operation best suited to individual needs, and essential methods of technic.

By such an arrangement, one will more uniformly do the operation best suited to individual needs; good team work, celerity and precision reduce the time required for operation, the quantity of anesthetic employed and the possibility of such accidents as slipping ligatures, losing pads, peritonitis, infected pedicles, stitch abscesses, etc. In one's accustomed surroundings, where a definite, systematic and careful technic is employed, it is rarely necessary to improvise. He is a poor surgeon who can not improvise if an emergency demands it. He is a poorer one who habitually or frequently allows himself to be placed in such a position that he must improvise. The act of improvising is evidence that an operator is substituting an inferior method of procedure for one he would prefer to employ in the individual case. While untoward results may rarely follow, ample room exists for the element of chance to enter.

The evolution of systematic methods and technic employed in operating rooms will necessarily vary according to individual requirements. The simple technic which has proved satisfactory in my operating room at the Allegheny General Hospital is briefly as follows:

In order to reduce the chance of transmitting infection to a minimum only three persons are supposed to have clean hands—the operator, the first assistant, and interne; they scrub their hands with soap and running water for twenty minutes, and then use such chemical antiseptics as will not injure the skin. Solutions of potassium permanganate, oxalic acid, bichlorid of mercury and, finally, alcohol being the sequence preferred, but if either of these solutions is irritating to the skin it is omitted.

All instruments and dressings used during operation are taken directly from the sterilizer by the first assistant. The arrangement of dressings and of instruments in trays and on tables is always exactly the same, thus enabling any one connected with the operation to find a desired article without a moment of hesitation.

In order to avoid unnecessary handling and consequently arousing of patients, they are anesthetized on the operating table, which is then rolled into the operating room.

While the first assistant is arranging instruments and dressings, the head nurse has the patient placed in proper position so that the interne proceeds at once to cleanse the field of operation. While the operator adjusts protecting sterile cloths, the first assistant verifies the count of abdominal pads and the head nurse places the instrument and dressing tables in their respective places.

The instrument table is placed within reach of the operator; as the instruments always occupy exactly the same position in the several trays it is easy to pick up any desired instrument without even turning the head. The first assistant having verified the number of pads available for use, must account at the end of operation for the number, which must always be a multiple of five. In order to avoid error, as soiled pads are discarded, the head nurse has one of her assistants collect these pads and pin them together in sets of five. These sets are then arranged in definite order so that with the greatest economy of time the head nurse may at any moment give the correct count of discarded pads. To this number the first assistant adds those in his keeping. If the aggregate is not a multiple of five, one or more pads must be found within the abdomen or elsewhere. So far as we know, a pad has never been left within the abdominal cavity, though without such a definite system I am confident such an accident would probably have happened.

The instruments, needles and suture materials are in the hands of the interne. It is our desire to simplify methods so far as possible, so only four types of needles are used. Each needle has its definite purpose. It always carries its definite kind of sutures—the suture material employed is limited to silkworm gut, celluloid linen No. 1, and the finest catgut, that will give a fair degree of tensile strength. We usually employ commercial catgut which is contained in hermetic glass tubes and is supposed to be sterile. Before using, however, the tubes are boiled for half an hour on two successive days.

It is my belief that the head nurse can accomplish most by being free to adjust the patient, to arrange instrument and dressing tables, irrigating stands, solutions, intravenous sets, hypodermics, if needed, supervise the counting of pads, send specimens to the laboratory for immediate frozen section, etc. We accordingly prefer that she should not have sterile hands.

The head nurse and her two assistants make all dressings used in the operating room—and see that a supply of all appliances used is constantly at hand.

It is our desire to make the postoperative treatment of patients as simple as possible, especially to minimize, so far as possible, the petty annoyances which disturb patients unnecessarily, etc. They are kept as quiet as possible, they are rarely catheterized—ice is usually applied to the abdomen—continuous enteroclysis, normal salt solution, Murphy method often serves a valuable purpose. The patient's position may be about what she wishes, unless there is some especial reason to avoid moving, such, for instance, as the use of drainage.

CONCLUSIONS

In conclusion, I believe that an accurate knowledge of the nature, extent and trend of disease, and exact determination of the patient's margin of reserve strength; a judicious adaptation of the time and type of operation to individual needs; a group of competent operative coworkers; a minimum amount of anesthetic; a rigid aseptic technic; and speed with precision, are factors which will yield a low mortality and highly satisfactory operative results.

ABSTRACT OF DISCUSSION

DR. C. A. L. REED, Cincinnati: Operative celerity consistent with the safety and precision of operation, with reference not only to minimizing the time but the amount of the anesthesia, is a matter that cannot be emphasized too strongly. I was invited for three o'clock one afternoon some time ago to witness an operation that was done in the patient's house, where it ought not to have been done. I arrived nearly half an hour late, expecting that the hysterectomy would have been concluded. I not only was not too late, but I had the opportunity of holding a coal oil lamp for over an hour after nightfall until the operator got through with his work. It is needless to say that the patient died. Recently a patient was kept under anesthesia for a simple perineorrhaphy for 2½ hours. Operations of that kind are being done with a frequency that is alarming, and the sooner this Association states its disapproval of this slovenly method the better. I have been in operating theaters, with good operators in charge, in which I have seen the surgeon, instead of paying strict attention to his business, engage in conversation with those about him, while the patient was being kept under an anesthetic, thus unnecessarily and dangerously prolonging the period of operation. I recall with pleasure that celerity was one of the great points constantly emphasized and exemplified by the late

Lawson Tait, than whom no more successful operator ever lived. Those who had the privilege of seeing him operate will recall with what promptness he did his operations, with what general precision they were done, and all will testify to the high grade of his results. The point to which he constantly called attention was the importance of minimizing the anesthesia with reference to sparing the patients from metabolic difficulties due to taking too much anesthetic. The time has arrived to proclaim, and I think the protest should go forward in no uncertain terms, that that surgeon who consumes an unnecessary amount of time in the performance of the operation subjects his patient to an unnecessary danger. Therefore, when a surgeon begins an operation, let him begin and pay attention to his business and keep at it until the work is safely done. And this reminds me that there are other phases of the question, either actually raised or suggested by Dr. Simpson's paper—and that is as to the question of surgical competency. This is an issue that we have been dodging in one way or another for a long time. It is one that nobody likes to take up. But we all know that a lot of surgery is being done by a lot of operators who are not qualified for the work. I shudder when I think of the possible unnecessary mortality due to this cause. In one of the states, Colorado, I believe, a bill was introduced last year that was intended to put a curb on this abuse by establishing a supplementary state license on surgery. I don't know what came of the bill, but I do know that the mere fact that such a bill was framed shows that the public is taking cognizance of the fact that general medical qualification does not always imply special surgical qualification. The fact is that surgical work is being cheapened by average amphitheater exhibitions. There is too much of this thing of going for a day or a week "to see the Mayos" or "to see Murphy," or "to see Richardson," or "to see Matas," and then coming back a full-fledged surgeon. The postgraduate schools with their semi-diploma certificates are far from being without responsibility for this situation. The fact is that the "smatter-courses" ought to be suppressed. Let us get to the point of thoroughness, to the point of apprenticeship, to the point of broad fundamental culture, to the point of careful manual training, and away from the irresponsible promiscuity that now too much characterizes the surgery of this country.

DR. J. H. CARSTENS, Detroit: The patient should be carried into the operating room and anesthetized without having time to think of the operation. The shock and dread kill many patients. Another point that I wish to make is that slow operating is bad practice. No one can operate with gloves so quickly as without, so I operate with my bare hands. I see men do all kinds of operations with gloves on. These often tear during the operation and naturally will infect the patient. In order to do good rapid surgery one must have asepsis and absolutely clean hands all the time, and that means that the surgeon must not at any time put his fingers into a dirty place. If he ever gets his hands contaminated it will take many weeks to get them clean, no matter what the antiseptic or what amount of scrubbing he employs. If I make a mistake in diagnosis and find that I have a pus case I quickly put on gloves.

DR. H. J. BOLDT, New York City: Dr. Simpson said that operators should be careful to make an exact diagnosis in cases in which they intend to operate. That is very nice and while an exact diagnosis should be made in 95 per cent. we must not put the burden on the operator so much as the teachers who are connected with schools sending out men who are in time to be operators. A great many men who enter the field of surgery take a postgraduate course of six weeks or two months and go out, considering themselves specialists in certain lines of work. It is not possible that any one can learn a proper technic in so short a time. Pupils in their senior year should be taught how to make diagnoses. The method of treatment will come of its own accord if a correct diagnosis is made.

DR. C. S. BACON, Chicago: It seems to me pertinent to call attention to the proposition that a special license be required for surgical operators. Last year such a measure was presented to the legislature of Colorado, but it was not endorsed by the profession. It, however, shows the trend of the times and undoubtedly there will be a great deal more proposals of the same kind in the future. The importance of proper training in diagnosis and especially in surgical technic is admitted by all. Does every one who receives a license to practice possess such training? We all know that he does not and it is manifestly not right that every one should have the license to perform all sorts of operations.

DR. F. F. LAWRENCE, Columbus: One contributory factor in shock which has not been mentioned is unnecessary traumatism. I care not whether it be by stuffing the abdomen full of gauze or by bruising the tissues with retractors. Every surgeon should teach that such unnecessary trauma is unsurgical. What useful purpose can a lot of gauze stuffed into the abdomen serve? None. There is seldom any necessity for putting a metal retractor in the wound. If there is a bleeding vessel down in the wound or in the pelvis or back in the mesentery it may be necessary for a moment only. When we teach that we must prevent every unnecessary trauma we will save our patients shock and forestall one of the elements of infection. There can not be infection in normal tissue.

Another thing: Operations should be done in a dry field. Sterilizing should be done the night before, a double sterilization; germs grow only in a moist soil. Ligatures should not be tied too tight. Strangulated tissue is dangerous and no matter how slight the strangulation may be it causes shock.

DR. ROBERT T. MORRIS, New York City: We are now on the verge of a fourth era of surgery. The first era was heroic. The next, anatomic. The third, now prevailing over the world, is the pathologic, in which we expect by mechanical measures to remove the causes and products of infection. The fourth era, on which we are just now entering, is the physiologic, which includes the idea of conserving all the natural resistance of the patient and allowing him to do what we have tried to do in a crude way mechanically. If we are to allow the patient to do this by conserving his self-resistance, we are to accomplish it by avoiding all the causes which shock the machine which is making phagocytes and opsonins. The patient has no other business. His business immediately after operation is manufacturing and if we interfere with the work of this machinery by long-continued operation, by long and unnecessary technic, by performing taxidermy on a patient with gauze, we prevent that patient from manufacturing his phagocytes and opsonins. An important point among those brought out by Dr. Simpson is asepsis. If I were anchoring a floating spleen I would wear a mouth mask, cap, and rubber gloves. If I were operating on a case of appendicitis with abscess, I would not wear a mouth mask, or a cap, or rubber gloves, and it would make no difference whether I washed my hands after the operation or before. If pus were spread on the normal peritoneum in the course of the operation I would leave it there. I would get in and get out. I would leave the patient with a normal resistance which would care for that pus so much better than I could care for it that his chances for recovery would be very much increased. In anchoring the spleen we might take twenty minutes for the operation; but for the pus case with appendicitis, we should not make the operation longer than five minutes if possible.

DR. HORACE G. WETHERILL, Denver: The established immunity which occurs in certain acute cases is important and frequently such patients should be tided over the acute stage. The general tendency of the last few years has been to do this with certain peritoneal infections, notably with those from appendicitis. Far too many operations have been done for acute pelvic infections and often with extremely bad results. The bill which Dr. Bacon referred to for the control of surgical operations was presented in the legislature of the state of Colorado. It was not approved by the local medical profession. As president of the Colorado State Medical Society I presented a plan which, for us, seems much better. In the west the hospital situation is different from that of the east. We have a hospital staff; but the work in the hospital is not limited to the staff. Any physician may take his patients into the hospital and do as he pleases. My proposal was that each of the hospitals in our cities appoint a representative, these representatives to form a body to be known as a

sort of hospital clearing house association representing all the hospitals in the community. Among other duties of this body every one wishing to take patients to the hospital must make application to this clearing house association. He must present his credentials, tell with whom he has worked, what his work has been, and in a broad way what his qualifications are. On such application made to this board his practice in the hospitals must depend. In many communities that is a plan which would meet this difficulty.

DR. JOHN A. MCGLINN, Philadelphia: I want to emphasize Dr. Boldt's statement in reference to diagnosis, and to urge the necessity of teaching and training students to be diagnosticians rather than operators. I feel that clinics made up of major operations are useless. The students can see but little of the technic, yet it gives them confidence to attempt work for which they are not trained. The time could be much better devoted to practical work in diagnosis. While I do not minimize the necessity of speed in operations I feel that completeness is a far more important factor. Recently I operated on a patient with double pyosalpinx several weeks after a general surgeon had removed the appendix. Within the past year a colleague operated on a patient with ruptured tubal pregnancy ten days after a very able surgeon had removed the appendix. These two cases are sufficient I think to prove the necessity of sacrificing speed to thoroughness in our work. The matter of anesthesia is important. I do not believe that it is advisable to allow the resident physician or an untrained man to give an anesthetic. I have always looked on the giving of an anesthetic as important as the operation itself. For this reason I have always employed a trained anesthetist. With reference to asepsis, I feel that the fewer assistants one has the better will be his results in an aseptic field. I use but one assistant for all operations and he has very little to do. He is simply used as an extra pair of hands to hold some instrument such as a retractor. One can train himself to work rapidly with few assistants, depending on himself for almost everything.

DR. F. F. SIMPSON, Pittsburg, Pa.: My object in bringing this subject before the Section was to get just what we have had, a definite expression of opinion by operators. Relative to some of the factors concerned in the reduction of mortality I would say that the synopsis that I have read is merely an abstract of my paper which will be published in full and a good many of the points brought out by the discussion have been more fully dealt with than the abstract indicates.

In regard to the reduction of mortality as related to the anesthetic, the opinion I wished to convey was that a study of the deaths during the last four or five years would show that probably one-third of the deaths could be attributed directly to the anesthetic, that is, to the effect of the anesthesia in disturbing metabolism, and its influence on the kidneys and on the liver. The more fully we study the subject of acetone bodies and the effects of metabolic disturbance the more do I believe that the anesthetic and its effect on metabolism will probably be found to be the cause of a high percentage of the deaths that actually occur.

VACCINE AND SERUM THERAPY IN CHILDREN*

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Vaccine therapy for prevention or cure of infection has for its object the production of an active immunity to the specific bacteria concerned, while serum therapy produces a passive immunity only.

Immunity, which is resistance or lack of susceptibility to a given disease or micro-organism, may be natural or acquired. Artificial or acquired immunity may be the result of an attack of the disease itself or it may follow inoculation with living cultures of micro-organisms in sublethal doses or in an attenuated state, with dead cultures or with those products of the growth and metabolism of bacteria known as toxins. Immunity so acquired is active or direct, comparatively slow in appearance, and of comparatively long though variable duration. It is brought about by the development in the blood serum of substances antagonistic to the vital activity of the bacteria or to the toxins. Such substances are known as antibodies. The serum of an animal which has been actively immunized and which is rich in antibodies may be inoculated into another animal for the purpose of combating infection. The immunity thus produced in the second animal is indirect or passive and of comparatively short duration.

The antibodies are of several kinds: agglutinins, opsonins, precipitins and lysins. They are formed by the tissue cells under the stimulus of the infecting bacteria, at first locally, then generally, and are present in the serum and to a lesser extent in the other body fluids. They manifest themselves in certain definite ways demonstrable and measurable by laboratory methods: agglutination reaction, opsonic index, bactericidal reaction, and the complement deviation test. Clinically their increase is accompanied by amelioration of the symptoms of infection. The aim of both vaccine and serum therapy then is to aid the production of antibodies in order to effect a destruction of the invading bacteria and the neutralization of their toxins. Metchnikoff asserted that the destruction of micro-organisms was brought about by their ingestion by phagocytes, especially polymorphonuclear leucocytes. Denys and Leclef have proved that there is a substance in the blood serum which prepares the bacteria for phagocytosis. This sensitizing substance was named "opsonin" by Wright and Douglas, who elaborated methods for its study in the laboratory and for its practical application to the treatment of infections by means of vaccines made of suspensions of dead bacteria.

It has been found in general that the opsonins are below normal at the onset of an infection and during the height of the acute stage, and that, as improvement occurs, the amount of opsonin in the blood serum increases. The administration of dead cultures of the bacteria causing the infection stimulates the production of opsonins, as proved by improvement in the symptoms and rise in the opsonic index.

TECHNIC

In order to estimate the opsonic index it is necessary to prepare serum from the patient, serum from a normal person, leucocytes from a normal person, and a culture of the bacteria from the patient's lesion.

Serum is readily obtained by pricking the finger and catching the blood in a small curved glass tube, as recommended by Wright. The blood is allowed to clot in the tube, and the resulting clear serum is removed by means of a capillary pipette, which is then sealed at its narrow end. The test should be made as soon as possible after drawing the blood, preferably within twenty-four hours.

Leucocytes are obtained from ten drops of normal blood caught in a tube containing 10 c.c. of 1.5 per cent sodium citrate in normal salt solution. The mixture is centrifuged and the fluid carefully drawn off and replaced by normal salt solution in order to wash the blood cells free from serum. After centrifuging again

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

the supernatant fluid is removed and the upper layer of white blood cells taken up into a capillary pipette, whose lower end is then sealed in the flame. This is known as the "leucocytic cream."

The suspension of bacteria is made in normal salt solution from an agar culture not over twenty-four hours old. It must not be too thick and should be free from clumps.

Capillary pipettes of similar caliber having been selected, equal quantities of patient's serum, leucocytes, and bacteria are drawn up and thoroughly mixed in one, while normal serum, leucocytes and bacteria are drawn into another. A control, using normal salt solution instead of serum, should also be made. The pipettes are sealed below and incubated for fifteen minutes at 37 C. The mixture is then expelled on a glass slide, thoroughly mixed again, and spread on clean slides. After fixing in methyl alcohol and staining in methylene blue the slides are placed under the microscope and the number of bacteria contained within fifty leucocytes is counted. This gives the phagocytic index and the quotient of the patient's and the normal phagocytic indices equals the opsonic index of the patient. More satisfactory results have recently been obtained by making the tests with diluted serum, according to Neufeld. The opsonins in the normal blood serum used for control are found to disappear in a lower dilution than do the immune opsonins in the blood of the patient who has been immunized by the disease or by the administration of vaccines.

The vaccine is made by suspending agar-cultures less than twenty-four hours old in normal salt solution. Equal quantities of bacterial suspension and of blood from a normal person are drawn into a capillary pipette, mixed, and thinly spread on a slide. The red cells and the bacteria are then counted in a number of fields. Since the normal blood contains 5,000,000 red cells to the cubic millimeter, the number of bacteria in proportion to the red cells can be estimated per cubic millimeter, and the actual count per cubic centimeter readily calculated. The tube containing the bacterial suspension is sealed and heated for two hours at 60 F. Control cultures are then made to test the sterility of the undiluted suspension. This having been properly accomplished, the vaccine is diluted in bottles of sterile normal salt solution, sealed with a rubber cap and paraffin, according to the dose desired per cubic centimeter. Thus, if the actual count showed that 5,000,000,000 bacteria were present in 1 c.c., diluting the vaccine fifty times by adding 1 c.c. of undiluted vaccine to 49 c.c. of sterile salt solution, would make a vaccine containing 100,000,000 bacteria in 1 c.c. Injections of 1 c.c. or less are made into the shoulder, back or thigh under strictest aseptic precautions.

Diphtheritic serum and the Flexner serum are both well known and require no comment.

RESULTS IN VARIOUS INFECTIONS

Staphylococcus Infections.—It is in these cases that the vaccine treatment has given the best results. While it is always wise to use a vaccine prepared from the patient's own strain of staphylococcus, it is not absolutely essential that this be done. Any stock vaccine which has given good results in a similar case may be used, provided that it has been proved by a culture made from the pus of the patient's lesion that staphylococci are the causative factors. It is essential also to know whether the *Staphylococcus aureus* or *albus* be present, in order that the appropriate vaccine may be employed. The dose in infants under one year should vary from 7,000,000 to 15,000,000 of dead cocci, and in infants between one and two years 15,000,000 to 20,000,000 may be given. In children over three years of age 20,000,000 to 50,000,000 may be used. The inoculations are repeated on the sixth to the tenth day if necessary. When the opsonic index is estimated throughout the vaccine treatment of such a case it is observed that a slight fall in the index follows the injection and that it may be accompanied clinically by a slight feeling of malaise, but no rise of temperature should occur. This constitutes Wright's negative phase of the reaction of immunity, and is followed in one to several hours by a rise in the index and improvement in the clinical symptoms. As soon as the opsonic index begins to fall below the normal on the fifth to the tenth day another injection is indicated. As a matter of fact, the test for the opsonic index has been found to be too uncertain to make it practical and worth while to follow systematically, the clinical symptoms being sufficient indication of the value of the vaccines. Too rapid or too large dosage must be avoided, because there is danger of exhausting the responding power of the human organism by overstimulation. The temperature should be taken before the vaccine is injected, and every three hours during the following twenty-four.

Furunculosis: In young infants this has proved readily amenable to treatment by staphylococcus vaccines. Improvement is shown by a much more rapid healing of the furuncles already incised and by the nonappearance of new ones. After the second inoculation improvement is the rule. The amount of pus is lessened and fewer dressings are required in cases so treated. No bad effects from the injections have been noted. It is best to begin with a small dose and increase if necessary.

Acne: Excellent results have been obtained by some observers; others report negative results. Larger doses are usually necessary.

Otitis media of staphylococcus origin: In this disease vaccines are reported, evidently by enthusiasts, as having proved of value, as also in suppuration in the antrum, in styes, in osteomyelitis, and in empyema. It is asserted that in the latter disease operation may, in rare and favorable cases, be obviated by the vaccine injections. After operation the vaccine is said to be of service in aiding the more rapid disappearance of pus from the pleural cavity and hastening the healing of the wound.

Any local suppuration due to staphylococci is benefited rapidly by vaccine administration. In general septicemia the results have been encouraging (Wright).

Streptococcus Infections.—In all cases of streptococcus inflammations the results of vaccine therapy have been far less brilliant than in staphylococcus cases, but still encouraging enough to warrant their further use. It seems to be essential also, far more than in the staphylococcus injections, that the vaccine be prepared from the strain of streptococcus isolated from the patient. The dose is about one-third that of the staphylococcus, 2,000,000 to 3,500,000 in babies under one year of age, 5,000,000 to 7,000,000 between one and two years, 10,000,000 to 30,000,000 in older children.

A boy, two months of age, developed an abscess on the chin. This healed after incision, but was rapidly followed by a suppurative epiphysitis and periostitis of the right tibia and of the sternoclavicular articulation on the left side, together with two areas of subperiosteal

involvement of the occipital bone. The right tibia separated from the remainder of the limb at the epiphysis and was removed, a new bone forming in its place. The bone abscesses healed and others continued to form at intervals during the next ten months. It was decided to employ vaccine made from the pus to control the infection. The infecting bacteria were found to be the streptococci. The vaccine was made by Dr. Hastings and seven injections were given of 9,000,000 to 20,000,000 bacteria of four days apart, 90,000,000 in all.

No improvement whatever was made on the infection. The abscesses continued to form and new bone areas became involved under the treatment.

I am sure that in this case the vaccine was used in too small dosage.

Erysipelas: In erysipelas Shorer finds that the course of the disease is apparently shortened by the inoculation of dead streptococci, but that neither migration nor recurrence seems to be prevented.

Scarlet Fever: In scarlet fever the opsonic index to streptococci has been studied by Tunnicliff, who finds that it is below the normal at the onset of the disease, but rises when the acute symptoms subside. As local streptococcus complications appear the index falls once more. Favorable results following the injections of dead streptococci in cases of scarlet fever have not thus far been reported. On the other hand, in local streptococcus inflammations—adenitis, otitis media, and osteomyelitis—the treatment has given most encouraging results.

Gonococcus.—In vulvovaginitis due to the gonococcus in young infants under one year of age, the injections of dead gonococci have had no effect in shortening the course of the disease, in lessening the amount of discharge nor in causing the cocci to disappear from the vagina. In older children Hamilton and Cooke have found that the effect of the dead gonococcus injections is more marked in chronic than in acute cases, the disease being very decidedly shortened in its course. The later stages of the acute cases were also shortened, while no result was noted in the first weeks of the attack. Hamilton and Cooke observed no advantage from the use of a vaccine made from the patient's own organism. The initial dose of 5,000,000 was gradually increased to 40,000,000 or 50,000,000, according to the needs of the case. Injections at eight-day or nine-day intervals proved best.

Pneumococcus.—The few cases of pneumonia in which dead pneumococci have been injected showed no marked advantages over untreated cases. In empyema of pneumococcus origin healing has been hastened by inoculations of dead pneumococci (Ross).

Meningococcus.—In cerebrospinal meningitis, due to the meningococcus of Weichselbaum, vaccine therapy has been tried, but it has become superfluous in view of the brilliant results obtained by means of the antimeningococcus serum of Flexner and Jobling.

Bacillus Coli Communis.—Inoculations of dead colon bacilli in doses of 10,000,000 to 50,000,000 are reported to have given excellent results in cases of cystitis due to that micro-organism. The symptoms subside rapidly and the bacilli disappear from the urine in a comparatively short time.

Typhoid Bacillus.—Injections of dead typhoid bacilli have been employed as a prophylactic measure in the English army with fair results. As a curative therapy in children they have not, thus far, been used.

Pseudodiphtheria Bacillus.—In otitis media due to this organism Dr. Tunnicliff obtained apparent benefit in some cases by injecting the dead bacilli. The attack of otitis was postscarlatinal and acute.

Tubercle Bacillus.—Local tuberculous lesions have been treated by injections of tuberculin in very small doses with good effect. This is true of chronic local tuberculosis without constitutional symptoms, especially in bone, joint, gland, skin and eye affections. In pulmonary tuberculosis of a chronic type, running a nearly apyretic course, tuberculin is also of value. In all acute tuberculous lesions with marked fever and general symptoms tuberculin therapy has proved useless and it may be attended by grave danger. The dose of crude tuberculin administered for purposes of immunization in a chronic tuberculous lesion should be very small, 1/5000 of a milligram, gradually increased to 1/2000, 1/1000 or more. The inoculations should be repeated not oftener than once in ten days, at first, and the temperature carefully measured every two hours. If a rise occurs the dose has been too large, and must be reduced at the next injection. In selected cases of bone and joint disease and also in adenitis, good results have followed six or eight months of continued treatment, the dose being gradually increased in amount and the intervals shortened to three days. Wright maintains that the opsonic index is an essential guide to the regulation of the dosage. Other observers are satisfied that the clinical reaction is a sufficiently accurate guide. The opsonic index to the tubercle bacillus is low in cases of tuberculosis, unless it fluctuates, owing to autoinoculation from an active lesion. It is the office of the treatment to raise the index permanently.

In an unpublished paper Dr. Raymond Hoobler of New York presents nine cases of different diseases in children treated with vaccines. Dr. Hoobler's work in many respects shows better results than hitherto published. Very large doses of vaccine were used at comparatively frequent intervals. Dr. Hoobler's paper will be published in the August number of the *Archives of Pediatrics*.

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ABSTRACT OF DISCUSSION

DR. H. I. BOWDITCH, Boston: We ought to regret that Dr. Kerley's paper did not come earlier. I feel very strongly on the subject of the treatment with vaccines. I have had little personal experience, but in the clinics in Boston it is being used widely. In the Children's Hospital it is used in much smaller doses than Dr. Kerley mentions. There we are using Wright's method, from 1/50,000 of a milligram of "1.0" up to 1/20,000 of a milligram. This change in dose possibly is due to a different form of tuberculin that we use. It has been thought unwise to use it in local forms of tuberculosis. In glandular tuberculosis, so far as I have seen it used, it has given excellent results. The length of time required for the treatment is not determined. In six months one may hope to have some effect, but how much longer it must be employed to keep the process under control I do not know. Another point we are divided on is where surgical intervention comes in. Large glands which soften must be opened, but whether they should be curetted out and when the proper time for tuberculin arises, is not a settled question. Emptying the abscess with Wright's trocar seems to me the best method. The colon vaccine has been employed in pyelitis with varying success. Other vaccines, e. g., the staphylococcus, are not employed so often as they should be.

DR. J. P. SEDGWICK, Minneapolis: In my hospital service a few cases of typhoid were treated by vaccine therapy, and the results were so remarkable in one case that I intend to try it again this summer. There was a drop in the temperature curve, and I should like to know whether or not there is any connection between the result obtained and the treatment.

DR. W. J. BUTLER, Chicago: Dr. Kerley's paper presents additional evidence of the advantages to be derived from vaccine and serum therapy in various infections. Staphylococcus and gonococcus infections have proved, in children, particularly amenable to vaccine therapy. I believe that I and my assistant, Dr. Long, were the first to demonstrate this for gonorrheal vulvovaginitis. While, in general, smaller doses of vaccine are employed in children, they tolerate large doses of the above vaccines without any marked general reaction. A local reaction at the site of injection, consisting of a slight induration that is somewhat tender, is usually observed, but is of no consequence. It is important, however, in an individual case to select a proper dose, and while there are in all probability other protective substances than opsonins produced following inoculations, an estimation of the latter forms the best guide at present in determining such dosage. There is probably no vaccine used in which an adherence to the latter is more important than in the use of tuberculin. I think that we owe a debt of gratitude to Dr. Flexner for placing in the hands of physicians throughout the country a specific serum for the treatment of epidemic cerebrospinal meningitis. I have used it in four cases, all of which, however, came under observation late in the disease, at a time when little could be hoped for from serotherapy, and all terminated fatally. In the experience of others, brilliant results have followed its early employment. I am not altogether convinced, however, that we have arrived at final conclusions as to how frequently it should be employed in a given case, especially in fulminating cases. The majority of statements on this point would seem to come from the clinical side and naturally are empirical.

A fuller knowledge of the active substances contained in the serum, the period of time in which such substances are exhausted when in contact with infected tissues, etc., might give us closer information of the frequency with which it should be used. A serum can possess, for instance, a definite antibody content, which, when brought in contact with the appropriate antigen, will be rapidly neutralized, become inactive, and consequently could not be of any further service. Kolle and Wassermann investigated the complement-binding amboceptor of antimeningococcus serum, which was, of course, first produced by Joachmann of Breslau. Joachmann must be recognized as its discoverer, in the same manner that we accord Bierring the credit for diphtheria antitoxin.

Kolle and Wassermann concluded that it contained a complement-binding antibody. It undoubtedly contains other protective substances.

MASSAGE IN GENERAL MEDICINE

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Massage is a systematic manipulation of the body for definite therapeutic ends. This manipulation depends for its success on the precise performance of certain clearly described and well-understood movements of the hands in the process. While these movements are in a general way always of the same sort, each of them is capable of modification to meet varying indications as one would vary the dose, the frequency of administration, or the strength of a drug. It is absolutely necessary for the operator to keep in mind when applying the treatment the particular end to be sought in the individual patient. The skilful manipulator scarcely ever rubs two persons alike.

The several movements used consist of various applications of rubbing, kneading, stretching and pinching of the muscles and other tissues.

You will see that this simple definition of what massage is tells by implication what massage is not. It is not magnetism, or personal electricity, or magic, or bone-setting, nor is it a panacea or cure-all for disease. It is applied, not by a flow of mysterious influence from one person to another, but by two hands directed by intelligence and applied with knowledge. It is a method of treatment aiming to produce certain definite ends, which should be prescribed by a physician as a medicine is; in fact, it is a medicine in any wide sense of that word which would not limit it to indicate something which comes out of a bottle in drops or teaspoonsful. There are indications for its use exactly as there are indications for the prescription of a laxative or a heart tonic. To get the best results the physician should know why he is ordering it, and the operator should know, too. The main thing, the thing to be always held in mind in prescribing or applying any remedy, is that we are seeking to produce certain particular effects in the individual case under treatment.

What effects can we produce with massage? Now, in the main, the mechanical results of massage are those of active exercise. We can by its direct influence alter the circulation of the blood and lymph as may be desirable, either slowing or hurrying their currents, can improve the tone and in some degree the bulk of muscles; affect the whole digestive system according to the method of application so that the activity of the peristaltic movements may be increased, the secretions aided, or, if need be, quieting and soothing effects produced. The superficial nerves can be directly reached, and the deeper-lying nerves and excretory organs also, somewhat less immediately. The chief difference between massage and active exercise is that we can not expect by any passive manipulation to add greatly to the quantity or power of the muscular system, while with active exercise properly directed this is almost indefinitely possible. The second and more important difference is that massage makes no demand on the voluntary nervous system, so that patients in whom for any reason it is desirable to avoid drawing on weak or irritable nervous centers may thus be exercised, in this way conserving nervous energy and economizing the expenditure of will-power.

The greatest value of the treatment is in diseases which are due to altered metabolism, and in which the powers of digestion, absorption or assimilation are at fault. It is this effect on nutritive processes which has made massage so successful in the treatment of certain nervous disorders, especially those bugbears of the general practitioner, hysteria and neurasthenia, in their infinite multiplicity of forms and symptoms. These troubles are caused in large part, so far as our present knowledge can tell us, by defects of assimilation or other disturbances of nutrition, and, as I have said, nutrition may be profoundly influenced by regular and continued massage. It is, indeed, an integral part of rest treatment, the only unalterable requirement. Without it rest treatment is scarcely possible, and we should be in constant difficulties in attempting the use of rest in this form were it not for the possibility of improving the appetite, the digestion, and the general metabolic conditions by means of massage.

The special forms of massage, light superficial rubbing, surface stimulation by vibratory movements and tapping, slightly deeper friction by finger-tip and open-hand pressure, and, more important, the manipulation by deep kneading, all have their influences, but the combination of these four basic movements, which make up what we call "general massage," have more effect than any of the individual movements used separately. This is obvious clinically from what one sees in the patient, and subjectively is to be learned from the patient's feelings, while physiologic experiment has proved very satisfactorily in a measured and precise fashion the immense

influence of this "combined manipulation" on circulation and secretion.

Some of the movements and systems of massage in use are, in my opinion, either useless or deleterious. Certain operators perform a number of fantastic and airy movements which may influence the surrounding atmosphere, but can not much affect the patient. Indeed, these light tappings and slappings are excessively irritating to some sensitive and nervous patients and should, therefore, be restricted to those cases in which an effect of stimulation of a passing kind is desirable. The vital, useful, alterative movements are the deep ones.

When a patient is rubbed for an hour, which is about the average time that should be taken for the careful manipulation of an ordinary sized person in ordinary flesh, certain very obvious effects are produced. In the first place (if we take a patient, let us say, at the end of a week's manipulation when the early strangeness and possible disagreeableness of being handled and pulled about has passed), in a successful case we shall hear from the patient that the operation leaves him with a slight and not at all disagreeable sense of lassitude, scarcely to be called fatigue, usually with a moderate degree of drowsiness and a sense of pleasant well-being. If, like most neurasthenic subjects, he has "that tired feeling," this should be lessened by each treatment, a gentle warmth should be felt over the whole surface, a distinct sense of stimulation of the circulation, an increase of appetite, an improvement of digestion, both gastric and intestinal, and sounder and longer sleep. Physiologically speaking, there is a temporary slight increase of temperature in almost all cases, from half a degree to a degree Fahrenheit, usually. If the manipulation has been a slow and deep one, not unduly prolonged, the pulse will be slower and stronger afterward. Too long-continued manipulation, while at first followed by this improvement in the force and slowing of the speed of the pulse, may show a reaction of a less favorable kind afterward.

Superficial rubbing, especially if both superficial and rapid, will usually result in the pulse becoming quicker and weaker, so that if patients say that they can not stand massage because it leaves them irritated and with a discomforting sense of rapid heart action afterward, some inquiry should be made as to the method in which treatment is being carried out. Judging by my own very large experience, there must be very few patients who can not be rubbed.

There is an absolute increase, susceptible of measurement, in the flow of blood through any part. There is an enormous addition to the actual number of red blood cells in circulation, as I have proved by blood counts before and after treatment. It is probable that this is the result of the deep manipulation bringing into the circulation from the various tissues producing or storing up red blood a number of partially developed or transition cells and later to an actual stimulation of production of red cells. There is also a distinct addition to the quantity of intestinal and lymphatic secretion and the improved movement of the blood and lymphatic currents and nutrition in every direction throughout the system. One marked effect produced by this change in circulation is an increase in the amount of the urinary secretion, which is not only greater in quantity, but contains more than the normal solids during the hours succeeding treatment. The motor, sensory and trophic nerves are all stimulated in their several functions, the most direct evidence of which is the general improved vasomotor control.

One need not describe the effects on pathologic processes, as they may readily be inferred from these statements of the physiologic effects.

As concrete examples of the kind of cases in which massage will prove valuable, I briefly cite a few instances:

In simple anemia an increase of red blood cells can be demonstrated, amounting to from 15 to 50 per cent. This effect, at first temporary, lasts longer and longer as the massage is continued and with the establishment of improved nutrition becomes permanent.

In a case of extreme anemia in which the red cells were only 2,600,000 and the hemoglobin 56 per cent., the first massage increased the amount of the red cells to 4,600,000, without any increase in the hemoglobin. This first effect of manipulation was not maintained, the count in a few days dropping to 3,200,000 after massage.

In a case of chronic lead-poisoning with 4,000,000 corpuscles and only 30 per cent. of hemoglobin, the red cells were temporarily increased by massage to over 6,000,000. It could, of course, not be expected that so great an increase would be maintained and it was, indeed, abnormal, but this first effect greatly increased the comfort of the patient, and, although the increase was not kept up to this height, it did go on steadily. In a case of anemia so severe as to resemble the pernicious variety, but in which ultimate recovery ensued, the red cells went from 1,500,000, the percentage of hemoglobin being 18, to 1,650,000, with the first treatment. In a week the count was over 3,000,000 before massage and the percentage of hemoglobin was doubled, and after massage the cells rose temporarily to over 5,000,000.

Whether such results as these can be attained will depend altogether on the character and duration of the massage applications. Light rubbing, slapping and tickling will not produce the desired effects, but deep slow manipulations for fifty or sixty minutes will, and if these results do not follow massage it may be at once concluded that the massage is either not the right sort or not rightly used.

In chronic constipation, with careful, continued and frequently repeated massage of the intestines, the accumulations of the bowel may be emptied, the weakened intestinal muscles stimulated, the secretions—nearly always deficient in this disease—brought back in normal quantity, and, when patients have begun to improve, a careful and punctual habit of defecation may be inculcated and a permanent cure thus result. Before attempting to use massage for chronic constipation it is necessary to empty the bowels thoroughly by high enemas, lest there should be some retention of feces in the colon, which sometimes happens, even when the bowels are being moved reasonably well daily by means of purgatives. If abdominal massage is applied while these matted masses are present in the bowel, inflammatory disturbances might result.

In nervous diseases, to take a common example, chorea will be treated more successfully, so far as duration is concerned, and much more satisfactorily, so far as the permanence of the results go, by a short time in bed with very slow, quiet, deep kneading of the muscles than by any combination of drugs yet evolved.

In another disease of unknown pathology, but with its effects chiefly perceived in the muscles, paralysis agitans, results are attained which enormously increase the ease and comfort of the patient; the ache resulting from the constant overuse of the flexor muscles can be relieved and a degree of relaxation brought about attainable in

no other way, and in favorable cases something really approaching a cure may be expected. Training in relaxation, extension movements, slow, full and sweeping, are added after a short course of massage, and the characteristic gait and carriage may also be improved by proper exercises.

In sprains, to select another disorder of a very different sort for an example, no treatment is so successful as early and frequently repeated massage. Sprains of the knee, ankle, elbow or wrist, may thus be treated from the very first day of their course, and, indeed, the earlier the treatment can be begun the briefer will the time of disablement be and the more completely successful the result.

The results of peritonitis, however caused, are excessively difficult and unsatisfactory to handle; if adhesions form, the impairment of the efficiency of the intestines and other abdominal organs may be very great. In one striking example of this we had the advantage of ocular demonstration. The late Professor Goodell attempted operation to relieve what seemed to be adhesions in the intestine. He opened the abdomen and found the whole abdominal contents so matted in one mass by old inflammations that no surgical interference was possible at all. Dr. Goodell closed the wound and in due time returned the patient to me for general treatment. Persistent massage during six months relieved the difficulty to such an extent that a woman who before had not had a stool without mechanical assistance in some years recovered excellent functional activity of the intestines and remained well for a number of years afterward, when I lost sight of her.

One might go on with a number of examples of possible uses of this form of treatment, but, not to elaborate them needlessly, I will add only one or two others.

In the first incompetence of a failing heart massage may be used successfully as an aid to circulation, thus lessening the work and consequent strain on the heart, as well as maintaining the condition of the patient.

In convalescence from acute disease, especially those of length and severity enough to cause considerable enfeeblement, this long-drawn period of invalidism may be greatly shortened and the patient much sooner placed on his feet by the use of massage in its general form.

It would perhaps be trespassing on the province of the surgeon if I called attention to the use of massage in hastening the healing in fracture cases.

Before closing, having thus in a very brief and hasty way outlined the value and importance of massage properly understood and legitimately applied, it may be worth while for me as a student for many years of the therapeutics of bodily exercises and of mechanical means of treatment to say something as to some illegitimate methods of use of a perfectly proper means. Odds and ends of physiologic and anatomic information, misty notions trickling through strata of ignorance as to the uses of manipulation, have resulted in the putting forward of some imperfect, half-understood and ill-applied forms of massage as cure-alls. For a time there was quite a run on a system called neurotherapy, which has now disappeared into the limbo of lost quackeries. This was massage badly done, and so for a year or two we heard of a good many serious injuries as a result of application in unsuitable cases. At the present moment the chief folly of the kind is osteopathy; the vehemence wherewith its advocates deny that it is massage causes the suspicion which is always natural when people "protest too much." I have read their books and seen their practice, and so far as can be gathered from the very nebulous statements of the inventor and of his followers there are two chief causes of disease. All those which affect the head, neck, chest, especially the pulmonary diseases, but including various serious diseases of the brain, croup and diphtheria (which Dr. Still considers one disease), bronchitis, and consumption are due to defects in the secretion, if you please, of cerumen in the ear! Nearly all other bodily troubles of any kind are due to dislocations or to fractures undiscoverable by the touch of a mere surgeon and invisible to the *x*-ray. If a patient is constipated, it is because some bones are pressing somewhere on the nerves or vessels supplying the intestines. Whooping-cough is due to the pressure of the hyoid bone on the pneumogastric nerve, together with deficiency in the quantity and quality of ear-wax.

Theoretically, besides the ear-wax difficulty (which is treated by the use of glycerin in the ear), these diseases are all to be cured by replacing the bones in their proper relations; practically, they are treated by severe, yes, ferocious, massage. The feelings of the osteopath are, as I have said, hurt when one calls his manipulations massage; it *is* rather hard on massage.

If it were not for that extraordinary affection with which the American citizen at large regards a quack, one would scarcely have to give so much time and consideration to a system which finds the same causes bring about whooping-cough, apoplexy, smallpox, dyspepsia and heart disease.

The real fact is that if massage were properly understood and properly appreciated as an invaluable medical aid the osteopaths would never had the success which has attended them. If there is any one thing certain from a study of their methods, it is that they have found out and made use of the immense value of massage and manipulation, and, as a result, are teaching, without perhaps intending to do so, the important lesson to the public of the value and necessity of bodily exercise, but that they do so in such a manner as to cause frequent damage and almost constant danger is another matter. The most serious accusation against them is that they claim to do impossible things, and in attempting them do dangerous things.

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INTESTINAL AUTOINTOXICATION AS A FACTOR IN THE CAUSATION OF PATHOLOGIC CONDITIONS OF THE EAR, NOSE AND THROAT *

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Further observations, confirmed by clinical and laboratory data since publication of my papers on this and kindred topics in 1902, 1904 and 1906, serve only to establish more firmly the views then expressed. The question of intestinal autointoxication, toxemia and lithemia, has at last come to the front where it belongs, and has gained wide attention from the medical profession both in Europe and America, and the results and treatment of putrefaction and toxemia originating in the intestinal canal have become matters of great importance not only to the general practician, but to the otorhinologist. Unsatisfactory results obtained after months of surgical and local treatment of some diseases of the ear, nose and throat have stimulated a more careful search for reasons why permanent relief was so rarely

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obtained from usual accepted and time-honored methods of treatment.

The question of normal and abnormal nasal respiration has been settled long ago—but the correction of these did not relieve or restore many to the normal condition, and careful investigation reveals the fact that the systemic conditions has as much to do with a large percentage of cases as does the local condition, or more.

We know that when the middle ear and nasal accessory sinuses suffer from "air hunger" as a result of imperfect or obstructed drainage and ventilation they do not functionate normally, and discomfort and pathologic conditions follow. Retained secretions become purulent and lead to sepsis and various functional disturbances, gastric, neurotic, circulatory and mental.

"Evidences from histology, comparative anatomy, experiments on animals and clinical observation show that the nose is the organ through which the current of air should pass in normal breathing; also that lowered vitality, accompanied by a variety of general symptoms, is often due to nasal obstruction." It is no less true that these conditions are caused by the systemic disturbance, a frequently overlooked factor.

For instance, there are more causes for deafness than (1) interference with the passage of sound to the terminal filaments of the auditory nerve, and (2) interference with the transmission of sound from the terminal filaments to the brain. We may have fatigue—a state of weakness, suspension of or inability to transmit its special stimulus or to interpret that stimulus correctly. As, in the eye, we may have an asthenopia or weakness of vision, so we may have a similar condition in the ear. We may have a functional disturbance due neither to internal or middle-ear disease. Occasionally we meet cases, the symptoms of which would indicate middle-ear disease; in another group the symptoms indicate disease of the internal ear, yet careful examination reveals that neither disease exists; hence we must look elsewhere for the cause. There is a middle class due to systemic disturbances. Since in the eye we may have diminished or obliteration of function from toxemia, why may we not for the same reason have a similar condition in the ear? That we do meet toxemia of the auditory apparatus I have frequently demonstrated. In this class of cases we find some disorder of the nervous, digestive, excretory or circulatory system which has intensified a comparatively trivial irregularity of the ear into troublesome deafness.

Richard Lake says: The great diagnostic feature of this class of cases is an excessive loss of bone conduction (C mastoid) compared with the high degree of hearing power, as tested by the conversational voice, acoumeter and whisper. There is also in most instances a marked loss of ærial conduction, as tested by a wide range of tuning-forks, and frequently musical tones and sounds are less adversely affected than noises.

Labyrinthine hyperemia is often caused by alcohol, overeating, gout, rheumatism and certain drugs, as quinin, ether and salicin. A large causative influence is also exerted in this condition by hyperplasia of the labyrinthine capsule and certain systemic conditions (i. e., lithemia and gout), due to a toxemia which I have demonstrated to be of intestinal origin.

In cases of interference with motion and fixation of the sound-conducting chain, if the real seat of the pathologic condition is the bony capsule of the labyrinth, what is the cause of this condition? Also if lithemia, gout and rheumatism may produce ankylosis or interference with functions of one part of the body, why not in another part?

Undoubtedly as the result of many years of disturbed function organic changes may take place in the intratympanic structures which are incapable of resolution, and many persons would escape the annoyance of tinnitus and humiliation of deafness, if preventive surgery had been used and proper living practiced.

I am fully in accord with views of Bezold, Siebenmann, Tweedie, Lake and many of our American otologists, that there can be no doubt that the general constitution of the patient furnishes the main basis for the etiology of otosclerosis, and that it can not be attributed to a local harmful influence affecting the ear exclusively.

In several hundreds of cases of diseases of the nasal accessory sinuses, middle and internal ear in which surgical interference was not indicated, and in all in which it was indicated and operative procedure resorted to, I have found unmistakable and marked evidence of toxemia of intestinal origin as evidenced by excessive quantity of indican in the urine, and when the condition causing this was removed there was marked amelioration or entire relief of the disease.

I do not believe that every functional disease has a structural derangement to account for it. No mechanism is sufficient for function simply because it is a mechanism. Each must have its special power for successful operation, and the source of power is in the blood. That the blood is poisoned through absorption of toxic material from the intestinal canal more frequently than from any other source I think will not be questioned. Food and drugs, once in the circulation, select the nervous function which they specifically arrange or derange, and some functional changes produce organic changes due to possession of chemical affinities, alcohol producing structural changes in the kidney and sclerotic changes in nerve and liver tissue. Functional diseases are usually intermittent; a broken or destroyed nerve fiber stays broken. Gouty poisons must accumulate in the blood a long while before the attack of gout. There may be a sudden explosion of uremia, but the blood has been uremic for some time before. I have seen gastrointestinal disorders severe enough to destroy life, which yet left no evidence of inflammatory elements. The neurologists tell of severe cases of melancholia due to fecal accumulation. The general law of nervous organization is that a repeated excitation of the nerve center will, in time, anatomically modify that center. If this law be true in one instance, why not true in another? We know that contraction of the circulation, resulting in hyperemia or ischemia with venous stasis, is sometimes brought about by the condition known as lithemia. (This term was first used by the late Dr. J. M. DaCosta, who described it as American gout, analogous to the uric acid diathesis, there being, however, no uric acid present, the irritation being some other chemical substance, perhaps alkaline instead of acid.) Quinin and salicylates cause the tinnitus, probably, by producing hyperemia of the labyrinth, as they increase the blood tension until actual toxic effects are manifested, when the tension is reduced. I have frequently seen the same conditions, the result of imperfect nutrition or overnutrition and defective elimination. Toxins, owing to disturbed body chemistry, are manufactured daily in the intestinal canal and remain in the system; the result is a protest from the irritated nerves and poisoned cells, manifested in rheumatic pains, asthmatic attacks, vertigo, obscure neuroses of eye, ear, nose and throat, neuralgias and periodic headaches; all these being evidence of systemic poisoning. This poison I have almost invariably found to be indican in the urine.

Greene M. Hammond, writing on neuritis from autointoxication, says that, while the presence of indican in the urine is significant of this condition, he does not consider indol alone a very toxic agent, but looks on skatol and butyric acid as much more powerful toxins.

Metchnikoff[1] concludes that in the putrefactive bacilli in our digestive canal we have a source of autointoxication against which the organization has to fight with all the means at its command. The intestinal putrefaction corresponds simply to the first appearance of putrefaction outside of the living organism.

Fermentation of carbohydrates occurs in the lower ileum and colon; putrefaction of proteids takes place in the large intestines. Putrefaction, except in the pathologic condition, never occurs above the iliocecal valve.

Herter found that administration of indol to healthy individuals caused frontal headaches, irritability, insomnia, and confusion; a long continuance of absorption of indol caused a strong reaction for indican in the urine sufficient to cause neurasthenic symptoms. Gases and other products of fermentation are mostly absorbed by the intestinal wall.

Ortiveiler and Muller say that the amount of indican in urine varies with the length of time the feces remain in the colon, with the activity of peristalsis, and with the site of putrefaction of proteins; when putrefaction extends up into the small intestine, urine indican is much increased.

Hammond's remarks as to the influence of diet are so important that I quote:

It is commonly believed that proteid foods are the ones concerned in the formation of putrefactive toxins; that is in the main, true, but it is quite clear to me that all forms of food, when eaten in greater quantities than the digestive fluids can digest, are capable of forming putrefactive poisons, which are deleterious to the human organisms. I have, therefore, insisted that all my patients should eat small meals in which the proteid foods should form a very small proportion. To my mind it is not so much what the patient eats, as how he eats. I have found the best results follow when general food was given, but the quantity of food of any kind was limited to a very small amount. Most people habitually eat, at least once a day and frequently at all meals, not only much more food than they need, but much more than they can digest. In the latter case putrefactive decomposition naturally follows. This may be obviated by giving only as much food as can be digested, and it is even better to give, for a time at least, even less than this amount. When this plan was followed every day for a number of days, the putrefactive products in the urine were invariably decreased and in some cases entirely disappeared.

In this paper I have attempted to emphasize briefly, as suggested by the title, the importance of intestinal autointoxication as a factor in the causation of pathologic conditions of the ear, nose and throat. In a subsequent paper I shall mention somewhat in detail the specific manifestations of these pathologic conditions; the treatment employed and results obtained.

Forest Highlands for Sanatoriums.—The Committee of One Hundred on National Health suggests that some of the great lumber companies could allow some of their large tracts of forest lands situated high in the mountains to be used for tuberculosis sanatoriums. As a reciprocal arrangement it is suggested that the state could remit taxes on the lands which lumber companies lease for sanatorium purposes. The tenure would be temporary and under conditions agreeable to all concerned. A further suggestion is made that life-insurance companies could undertake the management and that railroads could aid greatly by making reduced rates at appropriate intervals for the transportation of tuberculosis sufferers.

1. Metchnikoff: Méd orient., 1909, p. 134.

Clinical Notes

A NEW METHOD FOR DETACHING THE CATARACT IN ITS CAPSULE

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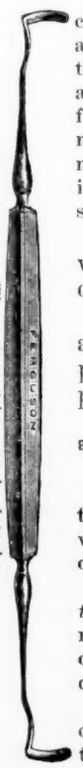
I wish to say a word—probably not the last word—on the extraction of cataract in its capsule. Of the Smith operation, which in recent years has attracted the attention of the world, all that need be said has been told by Greene[1] in THE JOURNAL. In the same issue Würdemann advocates the operation, but gives credit to Pagenstecher. Major Smith,[2] in THE JOURNAL of September 11, shows clearly that Pagenstecher himself makes no such claim, but, on the contrary, gives credit to Smith. Smith quotes Pagenstecher as calling Smith's "the best operation in the world; I will do nothing else."

While Greene was reading his paper I saw more clearly than ever the amount of trauma necessary in the Smith operation, and became more convinced that this particular operation could never become universal. He had not finished his paper until I had drawn, on the margin of my copy of the program, an instrument for detaching the cataract in its capsule. I later found that my first conception of this instrument was perfect. On my arrival in Philadelphia, from Atlantic City, I arranged for the making of a model. This I brought home with me for trial on pigs' eyes. It proved so satisfactory on these eyes, also on a human eye which had been enucleated, that I returned it to the manufacturer with the request that he make me three detachers just like the original model, differing only in the length of the curves. The following description will be more easily understood in the light of the accompanying illustration:



The cataract-in-capsule detacher.

The instrument terminates at each end in a double curve, the one in line with the handle and the other at right angles to this line. The point of bending is the point of union of the two curves. The two curves are to have the same radius as has the anterior surface of the lens, and the curves are to be 5, 6 and 7 mm. long, for the reason that eyes vary in size. The name will be the "cataract-in-capsule detacher." It is a right- and left-handed instrument, as the cut shows.

The model was made on June 12, 1909, and was used on animal eyes for the first time two days later, June 14.

The means described above makes necessary a new method of operation—new in essential particulars. The following is the method to be pursued:

A. Patient, instruments, operator and assistant are to be thoroughly prepared.

B. Complete local anesthesia is to be used.

C. Lids are to be separated by a stop-speculum, or the upper lid held up by the assistant, with lid elevator, while the lower lid is pulled down by the other hand of the assistant.

D. The operator fixes the eyeball by *grasping the tendon of the internus;* then with the other hand he makes the corneal incision of the usual size (5/11 of the circumference), associating with it a good conjunctival flap.

E. If an iridectomy is to be done, the one hand continues to fix the globe, while with his other hand the operator seizes the iris with iris forceps and

1. Greene, D. W.: Experience in Expression of Cataract in Capsule by Smith Method, THE JOURNAL A. M. A., Sept. 4, 1909, liii, 777.
2. Smith, Henry: The Smith Operation for Cataract, THE JOURNAL A. M. A., Sept. 11, 1909, liii, 882.

gently draws it out through the incision just far enough to enable an assistant to make a vertical snip of the iris with iris scissors, close to the tip of the forceps. The ideal operation, however, is without iridectomy.

F. The iridectomy having been done—or if the iridectomy is not to be done—the operator, still continuing to fix the eye with his grasp of the tendon, takes in his other hand the cataract-in-capsule detacher and, passing it into the anterior chamber, he directs the free point of the horizontal curve between the iris and anterior capsule, pressing it gently downward until both the horizontal and vertical curves are behind the iris, or between the iris and the cataract; and now the detacher is to be so held that the horizontal curve shall rest on the lens below, but parallel with, the horizontal meridian of the lens, while the vertical curve shall rest on the lens to the outer side of, but parallel with, the vertical meridian of the lens, half way between the center and the margin. This is the primary position of the detacher.

On two movements of the detacher depends the success of the operation:

1. The vertical curve is made to press against the lens in such a way as to rotate it on its vertical axis, causing the outer margin of the cataract to move backward while the inner margin is made to advance to the same extent. The effect of this movement of the detacher is to tear loose the ligament laterally, the tear including much more than two quadrants, leaving untorn, probably, only a few fibers directly above and below. Now the instrument must be returned to the primary position, thus replacing the cataract in its normal position.

2. The horizontal curve of the detacher must now be made to rotate the cataract on its transverse axis by advancing the free end of the instrument while making *gentle* pressure against the cataract below its center. The effect is to make the lower margin of the cataract recede while the upper margin advances accordingly. This motion tears loose the few remaining fibers of the ligament, above and below, making easy the next step.

3. The cataract in its capsule having been torn loose by the two movements of the detacher outlined in 1 and 2 above, this instrument should be withdrawn from the eye, and the cataract in the capsule should be delivered by external pressure, in the old-time way, often without any counter-pressure, the globe still being held by means of the tendon-grasp. Occasionally light external pressure will show that some of the ligaments remain intact, as in one of my eight cases. In such a case the fixation forceps should be laid aside that the left hand may make counter-pressure with the shank of the cystotome until the cataract in the capsule presents in the corneal incision. At this moment the counter-pressure should cease and the presenting cataract should be transfixed from behind with the point of the cystotome, by means of which the cataract may be lifted out, thus minimizing the amount of further external pressure on the lower part of the cornea.

By this method of continued fixation, detaching and delivering, the operation is simple, easy and safe, and the trauma is very slight. Subsequent irritation was practically nil in all of my eight cases.

This operation has been done twice by Dr. M. M. Cullum, one of my local confreres. After his first operation he turned to me and said: "Why, this operation is as easy as the old-time operation." After his second operation he telephoned me as follows: "Your operation beats the Smith operation a long way."

The after-treatment is the simplest, varying from the usual in that I leave the eye open behind a gauze flap after the second day.

What is new in this operation can be recognized easily by the reader, but I will summarize the points: (1) Method of fixation; (2) the detacher and the method of using it; (3) the transfixing of the lens from behind in cases requiring much external pressure.

The free use of pigs' eyes will give courage and confidence to the one about to adopt my operation.

137 Eighth Avenue North.

COMPLEMENT FIXATION WITH LECITHIN AS ANTIGEN IN PELLAGRA

A PRELIMINARY NOTE

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NEW ORLEANS

The original Wassermann reaction and its many modifications, though at first thought to be specific for syphilis, has been found in a number of other diseases that are all known, or thought, to be of protozoan origin. The reaction seems, then, to be limited to protozoan diseases with the exception of a few cases of advanced tuberculosis and leprosy.

The generally accepted theory of the etiology of pellagra the world over is that it is poisoning from eating improperly cured or diseased corn products. Lombroso extracted from spoiled corn an oil and other extractives with which he produced experimentally in animals a disease very similar to, or identical with, pellagra. In Italy, where there is much pellagra, the authorities have reduced the amount of the disease to less than one-fourth of what it was when the regulation against the use of diseased corn was begun. The work has been based on the maize theory. It should be remarked incidentally, however, that many of the cases have been isolated by providing a number of hospitals for the treatment of pellagra.

There are a few students, however, among whom may be mentioned Sir Patrick Manson, who dispute the maize theory, and believe the disease to be due to protozoa and cite as evidence the similarity of course, symptoms and pathology of the disease to syphilis and sleeping sickness.

In the research laboratory of Tulane Medical College we have so far tested the serum in six cases and all gave positive reactions. The technic followed was the original Wassermann, except that lecithin was used for antigen instead of syphilitic liver extract. The hemolytic system used was sheep corpuscles; serum of sensitized rabbits inactivated at 56° C for 30 minutes; and guinea-pig serum for complement. The patient's serum was inactivated before being tested. All six cases gave strong positive reactions. All the patients gave negative histories for syphilis; three were the mothers and one was the father of healthy children. One of the tests was made on blood taken twenty-four hours after death and is, therefore, not very reliable. One patient denied eating corn meal, though the diagnosis of pellagra appeared fully justified.

I fully recognize that these few positive Wassermann reactions in pellagra may be merely a coincidence and do not justify any conclusions, but if the observation is confirmed in a larger series it would tend to strengthen the idea that the disease may be of protozoan origin. It might also be of service in the diagnosis of the very many early or mild cases.

Still further, it would add another disease to the list for consideration in interpreting a positive Wassermann reaction.

741 Carondelet Street.

Mental and Physical Education.—The whole conception of the purpose and curriculum of a college education needs revision and into it must come a better relation of the physical with the mental life of the undergraduates. This characteristic feature of our educational system should furnish quiet years for thought and visions but it should, and that was the purpose of many of those who endowed them, make distinctly for efficient citizenship.—P. C. Phillips, in *Hygiene and Physical Education.*

COLIC IN AN INFANT DUE TO ADENOID HYPERTROPHY

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On reading Dr. Freeman's article entitled "Adenoid Hypertrophy During the First Year of Life and Its Treatment," I am constrained to report the following case. I well recall Dr. Morse's paper of two years ago, but neither in it nor in any other discussions of conditions induced by the hypertrophied adenoid have I seen attention called to the symptoms herein reported.

The case is that of a child about six weeks old, perfectly healthy and nursed by its mother, who was also in good condition. I was called one evening to see the infant—which I had delivered—on account of an attack of "wind colic." An enema brought relief, but the condition recurred the next day. The child was plainly a mouth breather, and according to the mother had difficulty in nursing as well as frequent attacks of colic. Examination with the little finger revealed a nasopharynx pretty well filled with adenoid growth. The child was placed on a small table, the father steadied the head while with an ordinary tongue depressor, the lower jaw was depressed and the smallest Beckman curette inserted. It was but the work of a moment to clean out the growth, and from that time on the child has had no colic.

In this instance the colic was due simply to the fact that, in its efforts to nurse, the child swallowed quantities of air. This is shown by the utter absence of any other symptoms of digestive disturbance and by the result of the operation.

As to the prevalence of hypertrophied adenoids in infants, I am convinced that it is far greater than usually recognized. An infant with normal air passages will keep its mouth closed, and "snuffles" and "catarrh" are more often due to adenoid hypertrophy than to syphilis or to any other condition. Neither "snuffles" nor "catarrh" invariably accompany even a decided overgrowth of the adenoid.

I am further convinced that it is rarely necessary to administer an anesthetic for the removal of adenoids in a child under a year old; indeed, I believe such a course is rarely justifiable.

Reconstruction of Bile Ducts.—Dr. Alfred H. Movius, Jamestown, N. D., writes that Dr. Arthur G. Sullivan's article on this subject in THE JOURNAL, Sept. 4, 1909, p. 774, suggests to him that a recent case, in which he did a partial reconstruction of the common duct, might be worth reporting. It is as follows: Patient: A Norwegian woman, aged 82, who had suffered with gall-stone colic for twenty years, came under observation in June, 1908. The skin over the entire body was decidedly jaundiced; more or less jaundice had been present for the past three months. The stools were clay-colored; the urine loaded with bile. A diagnosis of cholelithiasis with stone in common duct was made. Operation: The usual incision was made in the right hypochondrium. The gall-bladder was found to be atrophied and full of stones. After loosening the extensive adhesions, the gall-bladder was removed. The common duct was next opened and the stone removed. The lumen of the common duct, below the location of the stone, was very much contracted. Fearing occlusion of this portion of the duct and consequent poor drainage, Dr. Movius inserted a piece of rubber tubing 3/16 inch in diameter. The tube extended from ¼ inch above the incision in the common duct to ¼ inch into the duodenum. The duct was then sutured with No. 1 chromicized catgut, one stitch passing through the rubber tube to hold it in place. The abdominal wound was closed in the usual way. Postoperative History: Drainage was left in for four days, after which time it was removed and wound allowed to heal. Healing was complete in eight days. The bowels showed active bile drainage within the first thirty-six hours and the urine contained very little bile. The rubber tube passed on the fourteenth day following operation. The patient left the hospital at the end of the fourth week.

Therapeutics

CARE OF THE MOUTH

Dr. S. Blair Luckie, of Chester, Pa. (*Dietetic and Hygienic Gazette*, June, 1909), says so many pertinent things in regard to the proper care of the mouth preventing disease that it is well to review his article. The mouth seems to be splendidly arranged for the propagation and even protection of bacteria. There are cavities, caverns, and crypts, not easily cleansed, which are moist and warm, and more or less food is deposited near or in these spaces, which forms suitable pabulum for the growth of bacteria. A disturbance of the general health may change the mucous and salivary secretions and may impair the health of the mucous membrane of the mouth. Digestive disturbances not only coat the tongue, but interfere with the health of the rest of the mouth. Decayed teeth or painful roots of the teeth cause the patient to avoid that side of the mouth in masticating. One or all of these conditions may be present and allow the growth and propagation of pathologic bacteria in the mouth. In fact, there is hardly a general disturbance that does not interfere with the normal health of the mouth, which means good teeth; clean, pink mucous membranes; normal saliva; good digestion; and sweet breath. When one remembers how generally the breath of an individual is not sweet; how generally the tongue is not clean; how generally there is some tooth or teeth abnormality in a patient; and how incompletely most patients cleanse their mouths and teeth, we should not be astonished to learn that not only are harmless bacteria more or less constantly present in the mouth, but that pathologic bacteria occurring in the mouth are the cause of many serious diseases.

Unfortunately, an individual does not always realize that his mouth is dirty. Before he notices it there has to be considerable inflammation, considerable disturbance of secretions, and a bad taste in his mouth. Luckie quotes Miller as stating that one unclean mouth harbors 1,140,000,000 bacteria that may be cultivated, many of which are pathogenic. It has been shown that some of these pathogenic bacteria may cause not only intestinal indigestion and putrefaction, but may even be a source of pernicious anemia. A healthy gastric juice kills most of these germs that are swallowed, but anything that interferes with the normal amount of hydrochloric acid in the stomach may allow these germs to be carried into the intestines unharmed, where they can continue to grow. Besides the septic bacteria, the pneumococcus, the bacillus of diphtheria, and the bacillus of tuberculosis are sometimes found in the mouth.

The frequency of alveolitis and gingivitis after forty, even in otherwise normal individuals, shows neglect in the care of the mouth.

These bacteria, harmless or harmful, which are present in the mouth, may be inhaled, may be swallowed, may be chewed into the food, may be sprayed during sneezing or coughing, and may be offered gratuitously to friends who are kissed.

The object of this article is to cause the physician, whenever he is consulted by any patient, to examine the mouth carefully, and to give careful advice for daily continued cleanliness; the character of the solutions he deems advisable to order, depending on the condition in which he finds the mouth. He should also urge the patient to consult his dentist immediately if there is any cleaning or filling of the teeth needed. He should also instruct mothers in the care of their children's mouths.

Medical inspectors and teachers in schools should not only see that the eyes and ears of the children are normal, and that acute infection is not in evidence, but should also examine the mouths and teeth of the children.

The normal bilateral chewing of food of normal toughness is one of Nature's best methods of cleansing all parts of the teeth, developing the muscles, and causing normal mucous and salivary secretions. The softer the food the less all these normal functions are in evidence. It is a positive necessity that artificial means should be used to keep the mouth and teeth clean. Morning and night at least the teeth should be scrubbed with a good tooth brush carrying a proper combination of soapy and powdery cleanser. Every surface of each tooth should be brushed, and Luckie says that cheeks and gums should also be carefully brushed, and the mouth then properly flushed with some alkaline cleansing water, and there is none better than the Liquor Antisepticus Alkalinus (N. F.), diluted with one or two parts of warm water.

After each meal the individual should retire to his room or other suitable place, and with thin wooden toothpicks, or with a sharp-pointed quill used gently, and with dental floss, cleanse the cavities between the teeth and then briskly brush the teeth. It would be impossible to estimate the amount of infection that could be prevented should people adopt such a method of caring for their mouths. Also, a dirty mouth may be one of the causes not only of the diseases that have been positively traced to the mouth, such as some instances of pernicious anemia, but of the gradually developing arteriosclerosis and renal disease.

A patient who is actually sick comes under the care of a nurse, and not a small part of her duty is to see that the mouth is kept clean, and frequently cleansed. Patients with chronic disease should be taught, or assistance should be offered them, to use every means to keep the mouth from, by its infected or pathogenic condition, increasing the disturbances that are present.

When purulent conditions or pyorrhea are actually present, active antiseptics should be used as well as alkaline washes. The treatment of chronic inflammation around the teeth, termed Riggs disease, or, better, interstitial gingivitis, is well described by Dr. E. C. Briggs in THE JOURNAL, Aug. 1, 1908.

COLD IN THE HEAD

Although this simple affair has already been several times discussed in this department, as it is constantly with us, it is worth while to review what Dr. C. P. Grayson, of Philadelphia (*Therapeutic Gazette*, May, 1909), has to say on this subject. He tells the general practitioners that they have advanced little beyond their professional grandfathers in the prevention or treatment of this inflammation. He wishes to call the attention of the profession to the fact that purulent inflammation of the middle ear, inflammation of the optic nerve, inflammation of the cerebral tissue of the orbit, and even cerebral abscess can all be caused by improper management or neglect of a simple coryza, and this to say nothing of the frequency with which frontal sinusitis and inflammation of the antrum occurs as sequels to the "cold." While the different nasal infections vary in the virulency of the microbal cause, still simple infections can cause serious distant trouble.

Patients who frequently have acute coryza, and especially patients who have more or less chronic coryza, are sure to have some underlying cause. In children this cause is often adenoids. In adults it is often due to hypertrophied and congested nasal mucous membrane, but Grayson says that he has often found such patients, both adults and children, to have an intestinal toxemia.

An acute rhinitis is, therefore, likely to be founded on a tripod of causes, a chronic rhinitis, chronic intestinal toxemia, and exposure to cold (chilling), or to an irritant (dust, germ or other).

Grayson's treatment of acute coryza is as follows:

1. A cathartic, and best one of the ordinary saline cathartics, or a cathartic mineral water. This may be repeated on the following morning, if deemed advisable.

2. The patient should fast for twenty-four hours, and "during this period he should several times, for fifteen or twenty minutes, indulge in the most active exercise of which he is safely capable." Even women and children may be made to take simple active exercise that will bring about the condition desired, viz., "quickened and invigorated heart action, which will cause the skin, bowels and kidneys to become active eliminating organs, and the congestion of the nasal mucous membrane will rapidly subside and its effects be quickly obliterated."

3. If drugs are to be used at all, Grayson advises the salicylates, also a few drops of aromatic spirits of ammonia, or tincture of nux vomica. These drugs will tend to promote excretion. He does not believe in using combinations of opium, belladonna, aconite and acetanilid, all of which more or less inhibit normal secretion and excretion.

If the patient is old or too weak to carry out the exercise suggested, Grayson advises that gentle means of producing diaphoresis be inaugurated, such as a cabinet bath.

Many patients need no local treatment, but if there is much congestion and the patient needs local treatment by the physician, Grayson first uses a preliminary spray of a 2 per cent. solution of cocain, not more than two or three drops into each nostril. This soon shrinks the lower turbinates. Then with a small tuft of cotton on a slender applicator moistened with the 2 per cent. cocain solution he swabs the middle turbinates. The mucous membrane thus being entirely anesthetized and contracted, the nasal chambers are generously flushed with a mild alkaline wash, such as one part of the Liquor Antisepticus Alkalinus of the National Formulary to three parts of warm water. The patient snuffs this solution back into the nasopharynx, and thus the whole nasal cavity is cleansed. The mucous membrane is next soothed by the insufflation of some bland powder, as zinc stearate. Lastly, some bland, non-irritant, thin oil, containing a few drops of a suprarenal solution, may be sprayed into the nostrils, and the sedative effect of the treatment is prolonged.

Medical Missionary Work in China.—The province of Shansi, China, with a population of over 12,000,000, offers an inviting field to the Christian physician. Dr. W. A. Hemingway, a medical missionary of the American Board, has a small hospital at Tai-ku, where he treated 2,177 cases last year, besides a large number of dispensary patients. He is not troubled with rivals, the nearest hospital on the north being 35 miles distant, on the east and south 150 miles, while on the west there is none nearer than Persia. With only two Chinese assistants and two native men nurses, Dr. Hemingway has accomplished wonders since he went out in 1903. Shansi men are famous all over China for their business ability, especially as bankers. But the entire province, once wealthy, is cursed with the opium habit, and many of its victims come to this hospital for treatment. The price of the drug has doubled lately, thus forcing the poor to abandon its use, and the law is rigidly enforced that the poppy shall not be planted nor opium brought into the province from the outside.

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[*For other information see second page following reading matter*]

SATURDAY, OCTOBER 9, 1909

THE RELATION OF THE LIVER TO FAT METABOLISM

It is but a half-dozen years since Hofmeister aroused some attention by adding up the number of different enzymes which each liver cell must contain to accomplish the various chemical functions known to occur in these cells, the total number being something like ten. The worthy German scholar, however, missed some enzymes, for which there was good evidence even at that time, and if he were to rewrite his address now he would show that newer investigations have brought to light several more enzymes that should go on the list. Even with the respectable total of this revised catalogue of hepatic activities before us, we still must feel that as yet we have secured but a most superficial glance at the obvious industries of that busy little workshop, the liver cell, for new investigations into the metabolic activities of the liver continue to unfold new functions hitherto unsuspected, or at least unidentified. As to the enzymes that must be present within each individual microscopic liver cell, their number is augmented with especial rapidity as we learn that to produce any given chemical change several distinct enzymes may be required. As an illustration take the production of uric acid from nuclear material, a property of liver cells which has been known for some time. Closer investigation shows that to bring about this change the following distinct enzymes are required: first, a proteolytic enzyme to free the nucleic acid from the protein; second, an enzyme which frees the purins of the nucleic acid from the rest of the complex; third, two disamidizing enzymes to convert the purins, adenin and guanin, into the oxypurins xanthin and hypoxanthin; fourth, an oxidizing enzyme to convert the oxypurins into uric acid; and in some animals still another oxidizing enzyme may be present which destroys the uric acid.

One of the most recent disclosures of a hitherto unappreciated activity of the liver cell is set forth by Professor Leathes[1] in his substantial lecture before the Harvey Society last winter, and it concerns the rôle of the liver in fat metabolism. That the liver has much to do with the utilization of fat has long been recognized, while physiologists as well as pathologists have struggled with the knotty problems presented by the fatty changes of the liver in health and disease, only recently reaching something like agreement on the fundamental question of the source of the excessive fat in the degenerated organ. This fat, the work of Lebedeff, Rosenfeld and others seems to establish, is not formed from the protoplasm of the liver cell, as the dictum of Virchow maintained, but comes from the fats of the body and the food, and the studies of Leathes and his associates are emphatically in support of this conclusion. But even in health the amount of fat in the liver varies greatly, although practically constant in the other active organs, and this in spite of the fact that in the process of absorption the fats are kept out of the portal blood and turned into the general circulation by the thoracic duct so that the liver does not receive more in proportion than the rest of the body. Analysis of the fats normally present in the liver shows them, however, to be considerably different from the ordinary fats of the adipose tissue and the food in at least one important respect, namely, their chemical activity. We may recall that of the body fats some, such as stearin and palmitin, are relatively inert chemically, while others, notably olein, are much more active chemically because in them are certain carbon atoms whose chemical affinities are not all saturated. The presence of such unsaturated carbon atoms greatly increases the susceptibility of organic compounds to chemical change, and we see evidence of this in the familiar osmic acid reaction for fats, for osmic acid stains black only oleic acid and not the saturated palmitic and stearic acids.

Study of the fatty acids present in the liver under various conditions has led Leathes to suspect that an important function of the liver consists in transforming the relatively inactive, saturated or nearly saturated fatty acids of the fat depots and food into the more active unsaturated fatty acids. To describe this property figuratively, he says: "It looks as if the work of the liver consisted in an operation which may be compared to the drying of gunpowder. The fats we take in our food are remarkably unreactive substances, and it has always been one of the most astonishing chemical achievements of animal cells that they should be able to burn up completely and cleanly, as they do, so stable a structure as saturated fatty acids like palmitic or stearic acids. They are wet gunpowder, and the body stores its gunpowder wet, and safely removed from the inflammatory operations of busily working cells. When the orders for mobilization are issued, this wet powder is conveyed to the drying chambers in the liver, and from there distributed to the fighting line in a proper condition for use. There are times when the stress of this work is manifestly too great. Too active a mobilization of stored fat, or too little activity in dealing with it on the part of the liver, will result in an accumulation of the unfinished product in that organ. A fatty liver is then the result."

This increased accumulation of fat in the liver may take place in starvation, because of the demand of the body for food supplies, which results in the fat being taken to the liver to be so altered that it can be utilized

1. Lancet, London, Feb. 27, 1909; abstracted in THE JOURNAL, March 27, 1909, liii, 1061.

in the production of energy by the active tissues of the body, such as the heart and skeletal muscles. The alteration accomplished by the liver seems to consist in desaturating certain of the carbon atoms in the long chain of the fatty acid, and perhaps also in shifting the location of the unsaturated atoms in the molecule, in order to render these molecules available for chemical changes. According to this interesting hypothesis, therefore, the chief function of the liver in fat metabolism consists in preparing the fats for utilization by other tissues, and not in disintegrating the fats, for such disintegration of the fats in the liver through oxidation would cause the great amount of energy provided by the fats to be liberated in a place where it is not so immediately available as it is in the muscles.

NEW DEVELOPMENTS CONCERNING URIC ACID METABOLISM

In the discussion of gout in his book on metabolism, von Noorden says: "It is not to-day very alluring to write anything regarding the theory of gout, especially in a book which is essentially devoted to the presentation of facts. All the theories advanced up to the present time have fared badly. The positive material is much too insufficient and too ambiguous." While the theory of gout has not been made less hazardous, yet in the few years since v. Noorden wrote this statement the positive material has been considerably increased, and this at the expense of one theory in particular, namely, that gout depends on a loss or decreased power of the body to destroy uric acid. The recent advances have been made particularly through study of the enzymatic actions by which purin metabolism is accomplished, in which work Schittenhelm and Wiechowski have been particularly prominent, although several other investigators have made substantial contributions. The former, with his colleagues, has developed our knowledge of the several steps by which nucleoproteins are converted into free purins, and these, in turn, are changed into uric acid by loss of nitrogen and addition of oxygen. Wiechowski has particularly studied the enzyme concerned in the destruction of uric acid by the tissues, and the fate of free uric acid in the body. This uricolytic enzyme, which has been appropriately called uricase by Battelli and Stern, is an oxidizing enzyme, acting best in experimental digestions when a lively current of air is running through the digestion mixture, and which seems not to be present in the blood plasma and tissue fluids, but only in the cells. It acts rapidly and with striking effect, for active organ extracts are sometimes able to destroy quite considerable quantities of uric acid in a few hours; for example, one gram of powdered tissue, dry weight, can often destroy totally 0.1 gram of uric acid in four hours.[1] Unlike the enzymes of autolytic disintegration of tissues, uricase is not inhibited by the presence of an excess of serum. Another interesting feature is that this enzyme acts reversibly, or at least tissue extracts which destroy uric acid with a current of air running through soon build up the uric acid again when the air is shut off.[2]

Not all tissues contain this enzyme, its distribution, according to the investigations yet made, being as follows:[3] In bovines it is found in the kidney, muscle and liver, but not in the spleen, lungs or intestines; in dogs in the liver, but not in the kidneys, spleen or bone marrow; in the liver of pigs, rabbits and guinea-pigs; in the kidneys and many other organs in the horse, but not at all in the tissues of turtles and geese.

Of particular significance, however, is the observation that, so far as the means at hand disclose, no human tissue whatever possesses any appreciable power to destroy uric acid. There are, to be sure, various early observations which seemed to show at least a moderate uricolytic activity on the part of human tissues, but in view of the more recent work these results must be considered erroneous, perhaps because of faulty technic. The failure of human tissues to destroy uric acid under conditions which permitted complete destruction of uric acid by organ extracts from other mammals was observed by Künzel and Schittenhelm,[4] and later but independently by Wiechowski[5] and Wells and Corper. Using a different method from the above investigators, Battelli and Stern[6] find that, with the solitary exception of man, every mammal which they have investigated—and the number is considerable—possesses uricase in either the liver or kidney. In view of the fact that the human tissues, or at least the human liver, possess the necessary enzymes to manufacture uric acid from nucleoproteins, it is remarkable that man is not able to destroy the product as can all the other mammals. It seems impossible to doubt that this defect is responsible for the tendency of mankind to gout with uric acid deposits, a condition which affects no other mammals, but does occur in birds, which are, like man, devoid of uricolytic enzymes. As corroborative evidence is the fact that swine suffer from a form of gout in which a purin, guanin, is deposited in the tissues rather than uric acid, and swine are peculiar in that their livers do not possess the enzymes which act on guanin (Jones, Mendel).

It might be suggested that these experiments which show the absence of uricolysis in human tissues, having been made *in vitro*, do not prove positively that the living organs within the body are equally devoid of uricolytic activity. This objection may be met, however, by the experiments of Wiechowski, which seem to show that practically all the uric acid which is injected subcutaneously in man reappears unchanged in the urine. The chief product of uricolysis by uricase is allantoin, which has been found more or less abundantly in the

1. Wiechowski and Wiener: Beitr. z. chem. Physiol. u. Path. (Hofmeister's), 1907, ix, 247.
2. Ascoli and Izar: Ztschr. physiol. Chem., 1909, lviii, 529.
3. Wells and Corper: Jour. Biol. Chem., 1909, vi, 324.
4. Zentralbl. f. Physiol. u. Pathol. d. Stoffwechsels, 1908, iii, 721.
5. Arch. f. exper. Path. u. Pharm., 1909, ix, 185.
6. Biochem. Ztschr., 1909, xix, 219.

urine of every mammal investigated, except man, whose urine contains but traces.[7] This exception in the case of man furnishes good corroborative evidence of the absence or scantiness of active uricolytic enzymes in his body. To be sure, there are to be found statements in the older literature to the effect that pregnant women and new-born infants excrete allantoin in the urine, but Wiechowski finds that the methods then used were entirely unreliable, and Wells and Corper found that human placenta and fetal tissues at all ages were as devoid of uricase as adult human tissues. If man possessed the same uricolytic enzymes as the other mammals it is to be presumed that his urine would contain considerable allantoin, since experiments show that allantoin injected subcutaneously into man all reappears in the urine; the small amount of allantoin that is found in human urine, therefore, is good corroborative evidence that the human body is defective in uricolytic enzymes, a fact of fundamental importance in all considerations of gout and purin metabolism.

SPOROTRICHOSIS

Blastomycetic infection of the skin is now, thanks largely to the investigations of American observers, a well-recognized morbid condition. A considerable amount of literature has recently accumulated dealing with infections, not only of the skin, but of other tissues, by a fungus related to the *Blastomycetes,* the so-called *Sporotrichum.*

Schenck,[1] in 1898, observed a case of multiple, small, very refractory ulcerations of the skin of the right forearm which had formed along the course of the lymphatics leading from an ulcer of the index finger. The ulcers had resulted from the breaking down of small, circumscribed subcutaneous indurations. Cultures were made from the ulcers and indurated nodules, and Schenck's subsequent studies showed that the causative organism was a *Sporotrichum,* a fungus of the order *Hyphomycetes,* which grows readily on all the usual culture media. Schenck was able to reproduce the skin lesions in a dog by subcutaneous injections of the fungus, and, what is most important in the light of recent work, produced a general infection in mice with especial involvement of the lymphatic glands.

Schenck's observations have been verified and augmented by several American and French writers.[2] Sporotrichal lesions of the skin, mucous membranes, lymph glands and muscles have been described. De Beurmann, Gougerot and Vaucher[3] have directed attention recently to the occurrence of sporotrichal infections of the bones, a clinical manifestation which they were led to anticipate from the occurrence of similar lesions in their experimental researches on rats. According to these writers, the periosteum alone may be affected, causing nodular thickenings, or the bone substance itself may be involved, producing a sporotrichal osteomyelitis. Such lesions are said to be easily confused with similar changes of tuberculous or syphilitic origin, and the diagnostic difficulty is increased by the fact that the tibia seems to be the site of predilection for sporotrichal infections. In the cases of bone infection so far recorded, however, characteristic lesions in other structures permitted the detection of the sporotrichum by cultural methods. These observers have also produced joint lesions in rats by subcutaneous injections of the sporotrichum, and they urge a more careful differential study of chronic bone and joint infections with the aid of cultures.

Diagnosis is easy if cultures are made from the lesions, for the organism grows well on all the ordinary culture media in from four to five days at room temperature. It can be demonstrated in the lesions microscopically only with great difficulty. Widal and Weil[4] have shown that the spores of the fungus agglutinate when mixed with the patient's serum at dilutions of from 1-200 to 1-1500, and they describe a complement-deviation phenomenon similar to the Wassermann reaction in syphilis.

Sporotrichal infections show very little tendency to spontaneous healing. Fortunately, potassium iodid in doses up to 90 grains, supplemented by the local application of a solution consisting of water, 500 c.c., potassium iodid, grams 10, iodin, gram 1, is very efficacious, the lesion healing, it is said, in from four to six weeks.

THE VITALITY OF SUPERSTITIONS

Professor Sumner[1] recently conjectured that the civilized world might some day drift back to demonism. The date need not have been left indefinite, so far as at least some portion of civilization is concerned. In the present day there are aberrations quite as peculiar as those which surprise us in reading the history of the middle ages. We may well agree with Lecky that one generation differs from another less in the amount of credulity it evinces than in the direction such credulity takes. Belief in marvelous cures, faith in magic—these things are not dead to-day; at best they but slumber, to be aroused to lusty and malignant activity by the next unscrupulous or fanatical leader. Nor is it any more difficult in this twentieth century, it would seem, to excite emotional epidemics than it was in witchcraft days, or when there were processions of flagellants and dancing manias.

To assure himself of the truth of these gloomy observations, one need but glance through any daily newspaper. Consider, for example, the faith-cure craze but recently revealed in a western state. A bill was introduced before the legislature providing that, in connec-

7. Wiechowski: Biochem. Ztschr., 1909, xix, 368.
1. Bull. Johns Hopkins Hosp., 1898, ix, 286.
2. THE JOURNAL A. M. A., Aug. 8, 1909, li, 500.
3. Rev. de chir., 1909, xxxix, 662; abstr. in THE JOURNAL, May 29, 1909, lii, 1799.
4. Quoted by Beurmann, Gougerot and Vaucher.
1. Sumner, W. G.: Witchcraft, Forum, May, 1909.

tion with elementary hygiene, public school pupils be taught how to avoid contagion and the commoner ailments. Immediately protests began to pour in from all sorts of radical mind-healers, who held that it would be sinful to give children the impression that disease was real; according to newspaper statements, this was the message in hundreds of letters and long petitions. The assembly committee on public health, despite its three physician members, was overawed at the first hearing on the measure, and killed it. Thus has superstition become the match of medical science in shaping the educational policy of public schools.

All this is depressing enough. Through many painful generations science has been evolving order out of philosophic chaos. This is especially true of medical science, which has accomplished far more than any other factor for the welfare and happiness of mankind; it has come, indeed, to deserve such tribute as was recently paid by an eminent clergyman: "You will find to-day the largest body of disinterested, laborious, self-sacrificing men, looking for no reward and getting no reward except that which comes from faithful service to mankind, in the profession of medicine." A century and more ago Jenner demonstrated how a dreadful pestilence need never again afflict our fellows; yet to this day would the mind-healer have us revert to its medieval horror. Von Behring has shown how deaths from diphtheria can be avoided for little children; to this very day would the faith-curist stand over children suffering from this disease, trusting to prayer only, and withholding the sure relief, while they expire from suffocation. Pasteur and Koch have shown how tuberculosis can be eliminated from human experience; the Eddyites would press the conviction (and, amazing to state, do convince some) that this disease is non-existent. Better than this it were, indeed, to revert to voodooism; for the latter has, at any rate, the sense to believe in tuberculosis and to seek a material remedy.

SANATORIUMS AND PROPERTY VALUES

The National Association for the Study and Prevention of Tuberculosis has collected evidence showing that well-conducted sanatoriums, dispensaries and camps for sufferers from tuberculosis are not detrimental to any community; that, on the contrary, their presence tends rather to enhance than to depreciate its property values. Recently, the subject has been studied, continuing an investigation conducted four years ago by William H. Baldwin,[1] of Washington, D. C., and for a summary of this study we are indebted to the *Survey*. Thirty-seven institutions were considered, and these were located in twenty-two states, as diverse in situation as Maine and California, as Oregon and Georgia. According to sanatorium authorities, real estate agents, as well as various disinterested people, more than 67 per cent. of these sanatoriums have favorably influenced the property surrounding them, and have otherwise benefited their respective communities. Twenty-three (62.2 per cent.) of these institutions helped definitely to increase assessed valuations. In only one instance was there a decrease in value, and this is considered to have been due to ignorance of the facts. In twenty-two cases among the thirty-seven the sanatorium facilitated the sale of land; in only four cases was any detrimental effect on sales shown. In more than half the cases, residents were attracted by the sanatorium, and in only three localities were they repelled. In the vicinity of a sanatorium in Portland, Oregon, land has more than doubled in value in three years, being in demand close to the institution; at Aiken, S. C., property in the neighborhood of the local sanatorium has increased fourfold since its erection; at Asheville, N. C., vacant lots near one of the sanatoriums sell at four times their price in 1900, and others farther from the institution but nearer the city are less valuable; at Hebron, Me., surrounding property has increased 20 per cent. as a direct result of the presence of a tuberculosis sanatorium. Similar effect on land values is reported from Luzerne, Pa., Liberty and Saranac Lake, N. Y., Pittsford, Vt., Mount Vernon, Mo., and Silver City, N. M. In St. Louis, Philadelphia, New York, Brooklyn, Boston, Pittsburg and other large cities, property surrounding tuberculosis institutions has increased in price; not a single instance was reported in which the presence of a camp, dispensary or sanatorium in a large city has had a detrimental effect on contiguous property. It is noted that the courts of Massachusetts, North Carolina and Virginia have decided that a tuberculosis sanatorium is not a menace to the health of a community, or to the property in its vicinity.

Much of the lay opposition to the sanatorium in the past has been due to misconception of the nature of infection in tuberculosis. Nor is it yet universally understood that in this disease the virus is not air-borne; that practically all infection from consumptives to their fellows is through the medium of the sputum, and that when this is properly disposed of there is no danger. The fight against tuberculosis sanatoriums has frequently been bitter, and sometimes virulent; it has nearly always been occasionless and based on ignorance. Poor Bodington, who in 1840 established the first institution on our modern principles of phthisiotherapy, had to succumb to it; on which, with much relevance, he turned his institution into an asylum for the insane. Next came Brehmer, who, fortunately for humanity, weathered superbly the cyclonic storms which beset him. Since 1854, when he began his work at Goerbersdorf, that village, fortunate in its defeats at his hands, has trebled its population; it has become vastly prosperous; it is now ready to accommodate any number of sanatoriums, and there are to-day within its hospitable limits at least five such institutions.

This is fast becoming the universal experience. There is no place so safe from tuberculosis infection as

1. Property Benefited by Tuberculosis Sanatoriums, Survey, June 19, 1909, xxii, 422.

a well-ordered sanatorium; in nineteen years no nurse or other attendant or any servant contracted tuberculosis in the institution the destinies of which are directed by Trudeau; would any one dare say as much of any city home in which there has been a consumptive? The sanatorium has always had a commercial value, the nature of which was soon grasped by the astute agriculturist; it needs every day enormous quantities of butter, eggs, milk, cream, meats—and why should not these staples, as well as the labor required, be furnished by its neighbors? In cities, also, merchants have found these institutions a stimulus to trade. The sanatorium, moreover, raises local health standards; it becomes a school in which the vicinity learns the principles of hygiene and prophylaxis. Besides, the very fact of a given locality being selected for a sanatorium site is a surety and a gratuitous advertisement that it is a salubrious region, and this tends to make the place a profitable "health resort," and helps real estate agents to get "cottages" and other similar buildings erected.

THE PREVENTION OF MALARIA

Malarial disease is so familiar to us in its milder forms that few, even of experienced practitioners, have an adequate conception of what its actual cost in human life and human health is in the aggregate in our country. Figures which may be assumed to be reliable, as quoted by Dr. Seale Harris in his article in this issue, give us a mortality, as he says, greater than that of any or all the epidemics of yellow fever in the last half century. Taking into account that mortality is a very poor index of the actual damage done by this disease, since Dr. Harris says that probably not one in five hundred of those affected dies, these figures are sufficiently formidable. It is the morbidity caused by malaria, however, that is the factor mainly to be considered, and the importance of this can hardly be overestimated. Without going into the usual calculations of the value of human life and health from a financial standpoint, there is sufficient evidence of the evil to be found all over the world in deserted regions which were formerly centers of active and thriving populations. In spite of this, malaria is a preventable disease and this waste of human life and health can, to a very large extent at least, if not entirely, be avoided. Even in the tropics, where the conditions are most unfavorable, as in the Malay States and Panama, it has been shown that it can be permanently stamped out. These facts show that the problem is not so difficult as it appears, and we have had sufficient object lessons of the ease with which it may be accomplished in some parts of the Middle West where chills and fever, once very prevalent, have almost entirely disappeared, from the ordinary methods of opening up the country with cultivation and drainage. Dr. Harris' recommendations that malaria should be made a reportable disease and the patients isolated, may be difficult to carry out in some communities, but they are not impracticable and with the proper education of the people the difficulty would probably soon disappear. This can be accomplished, as he says, by means of lectures and tracts, etc., and, still better, by the individual efforts of those who are already enlightened on the subject. The benefit of a national association for the study and prevention of malaria is well illustrated by the experience of Italy, in which country the mortality and morbidity have been very largely reduced. Malaria prevention may sometimes raise interstate questions and the necessary measures cannot be always efficiently carried out by local legislation. Still, any community can protect itself against indigenous infection, unless very exceptional and extraordinary conditions exist. It is not ordinarily essential that the aid of the national government be invoked, but, in order to carry out the larger drainage enterprises that may be advisable, its help will be exceeding useful if not absolutely necessary.

Medical News

FLORIDA

Personal.—Dr. Henry C. Dozier, Ocala, has been appointed local surgeon for the Atlantic Coast Line, vice Dr. William H. Powers, deceased.——Dr. Gaston Day has been appointed city physician of Jacksonville.

Bacteriologic Laboratory.—Tampa has donated a site for a branch laboratory of the State Board of Health, and the board has decided to locate in that city. The state will erect a building to cost about $30,000. Dr. Howard S. Holloway, who has been in charge of the Jacksonville office, will take charge of the temporary laboratory to be used until the completion of the new building.

Tuberculosis Sanatorium Donated to State.—Dr. John E. Ennis, who has conducted for several years a private tuberculosis farm sanatorium near Kissimmee, has offered to donate the property to the state on condition that it is to be thoroughly equipped and so conducted as to prove of benefit to the greatest possible number of tuberculosis patients. The proposition has been accepted by the State Board of Health, and the board has acquired by donation sufficient land to make a total of 100 acres, located in Hendon Park, with a frontage along Hendon Lake. About $87,000 is at present available for the establishment and maintenance of the farm.

ILLINOIS

Hospital Opened.—It is announced that Graham Hospital, Canton, was opened about October 5.

Personal.—Dr. Ora L. Pelton, Jr., Elgin, has started for Europe.——Dr. Otto R. Scott, Chrisman, who has been critically ill, is reported to be improving.——Dr. and Mrs. Bernard Fantus, Chicago, have returned from Europe.

Antispitting Crusade.—The Board of Health of Rock Island has inaugurated a crusade against expectoration, and has posted placards calling attention to the fact that persons spitting on sidewalks will be subject to a fine of $5.

Free Health Advice to Working Men.—The Occupational Disease Commission announces that a publicity campaign will be inaugurated with the cooperation of state officials and medical experts. The scope of this work will include hints for workers and employers on every occupation of injurious nature, extending to household occupations.

Investigate Pellagra.—Following an investigation by the president of the State Board of Charities, and others, into the pellagra conditions at the Peoria State Hospital, South Bartonville, Secretary W. C. Graves is to submit a report to the governor recommending that a committee of physicians and biologists be authorized and appointed to make a complete investigation into the disease.

State Conference of Charities.—The fourteenth annual meeting of the Illinois State Conference of Charities and Correction will be held in Peoria October 9-12, under the presidency of William C. Graves, secretary of the State Board of Charities, Springfield. Among the more important features of the convention are addresses on "Occupations for the Blind," by Charles F. F. Campbell, Cambridge, Mass., superintendent of the Industrial department of the Massachusetts Commission

for the Blind, and vice-president of the National Society for Workers Among the Blind; "Clinical Organization of State Hospitals," by Dr. William L. Russell, state inspector of state hospital service for the New York Commission in Lunacy; "Adult Probation," by Warren F. Spalding, secretary of the Massachusetts Prison Association; "Care of Needy Families in their Homes," by Marcus C. Fogg, district superintendent of the Pittsburg Associated Charities; "Medical Supervision of Public Schools," by Dr. James Stewart, medical supervisor of the St. Louis public schools. The president will respond for the conference and will speak briefly on "The Relation of the New State Charities' Administration Law to the State Conference of Charities and Correction, and to the City and County Governments."

INDIANA

To Aid the Work Against Tuberculosis.—Responding to the appeals of the Evansville Antituberculosis Society, the Vanderburg county council, at its annual meeting, September 7, appropriated $1,000 for the work against tuberculosis.

Personal.—Dr. Mary E. Jackson, Hammond, while making a professional call, September 22, fell through a rotten porch and suffered a fracture of the left patella and severe contusions.——Dr. John I. Metts, Ossian, is reported to be critically ill with cerebral hemorrhage.——Dr. Charles R. Dancer, Fort Wayne, has been appointed city medical inspector of schools.

MASSACHUSETTS

Test Pupils for Typhoid.—In order to prevent further spread of typhoid fever among school children of the Brighton district, the chairman of the Board of Health has had cultures taken from each of the 4,500 school children of that district.

Inauguration of Harvard's President.—The program for the inauguration exercises of the new president of Harvard University, Abbott Lawrence Lowell, October 5-7, contains the following items of interest to medical men: At 2:30 p. m., October 6, the Harvard Alumni Association will meet in Memorial Hall; and on Thursday afternoon the Faculty of Medicine and the Harvard Alumni Association will be hosts at an afternoon tea at the medical school, Longwood avenue.

Personal.—Dr. James V. W. Boyd, Springfield, has been named to succeed Dr. Herbert C. Emerson, resigned, as health inspector and physician of the Fourteenth district.——Dr. Clarence I. Sparks, Easthampton, has been named medical examiner for the Hampshire district, vice Dr. William G. Kimball, Huntington, resigned.——Dr. Henry A. Christian, dean of Harvard Medical School, delivered an address at the dedication of the new medical building of Leland Stanford, Jr., University, and was entertained at luncheon by the medical faculty of Epworth Medical University and Oakland County Medical Society, September 17.——Dr. J. W. Crawford has agreed to take charge of the tuberculosis camp established by the Young Men's Christian Association of North Adams.

MINNESOTA

Zone of Quiet.—Alderman Bow, a member of the Minneapolis council committee on health and hospitals, will introduce an ordinance for the establishment of a zone of quiet to be maintained in the vicinity of all hospitals in the city.

Personal.—Dr. S. Scott Blacklock, Hibbing, was recently operated on for appendicitis and is making a good recovery.——Dr. Hannibal H. Kimball, Minneapolis, has returned from Europe.——Dr. William C. McCarty, Rochester, had his right hip dislocated in an automobile accident at Ogden, Utah, September 21.

Experiment with School Medical Inspection.—The Board of Education of Duluth has decided to establish temporary medical inspection in four schools of the city as an experiment, and if this prove satisfactory, the inspection will be adopted by the board for all schools, and the cooperation of the parochial schools will be asked. Dr. Samuel H. Boyer is the medical member of the committee on schools and teachers which formulated this plan.

State Medical Society Meeting.—The annual meeting of the Minnesota State Medical Association will be held in Winona October 12-14, under the presidency of Dr. Cornelius Williams, St. Paul. The oration in medicine, on "Administration Problems in Relation to the Public Health," will be given by Dr. Walter Wyman, Surgeon-General U. S. P. H. and M.-H. Service, Washington, D. C., and symposia on the following subjects, "Epidemic Anterior Poliomyelitis," "Cooperation of State Forces in Minnesota Medicine," "Ophthalmia Neonatorum," and "Typhoid Fever, a Medical and Economic Problem as Illustrated by the Classical Mankato Epidemic of 1908."

MISSOURI

Quarantine Time Extended.—The St. Louis Board of Health has increased the quarantine period for scarlatina from four weeks to six weeks.

County Society Purchases Stereopticons.—The St. Joseph-Buchanan County Medical Society has purchased two large stereopticons for use in the course of postgraduate study, suggested by the American Medical Association, which the society has commenced.

Hospital Staff Appointed.—The winter staff for the new Kansas City General Hospital has been appointed as follows: Attending staff surgeons—Drs. Jabez N. Jackson, Albert H. Cordier, Jefferson D. Griffith, John F. Binnie, Herman E. Pearse, B. Clark Hyde, Howard Hill, John M. Frankenburger and Ernest F. Robinson; assistant surgeons—Drs. James P. Henderson, A. Comings Griffith and Ottokar Hofman, Jr.; physicians—Drs. John L. Robinson, Samuel C. James, Robert T. Sloan, Charles C. Conover, Otho L. McKillip, Franklin E. Murphy, Hugh D. Hamilton, and J. M. Lowe. Consulting staff: Obstetrics—Drs. Caleb A. Ritter and George C. Mosher; pediatrics—Drs. Clay S. Merriman, Harry L. Heller and Jesse E. Hunt; gynecology—Drs. George B. Norberg and C. Lester Hall; otology and laryngology—Dr. James E. Logan and David L. Shumate; ophthalmology—Drs. Flavel B. Tiffany and Andrew W. McAlester, Jr.; dermatology—Drs. Halsey M. Lyle and William Frick; genitourinary—Drs. George W. Davis, Jacob Block and Ernest G. Mark; neurology—Drs. John Punton, Henry O. Hanawalt and Rush E. Castelaw; skiagraphy.—Drs. Edward H. Skinner and Oliver H. McCandless; and pathology—Drs. Frank J. Hall and Otto L. Castle.

NEW MEXICO

New Mexico Red Cross.—The New Mexico branch of the National Red Cross elected the following officers at the annual meeting, September 17: President, Dr. George W. Harrison, Albuquerque; vice-president, Dr. James W. Laws, Lincoln, and secretary-treasurer, Dr. John W. Colbert, Albuquerque.

Antituberculosis Society Organized.—At the meeting of the New Mexico Medical Society, a New Mexico branch of the National Society for the Study and Prevention of Tuberculosis was organized with the following officers: President, Dr. Francis T. B. Fest, East Las Vegas; vice-president, Dr. John W. Colbert, Albuquerque; and secretary-treasurer, Dr. Leroy S. Peters, Silver City.

NEW YORK

New York City

Personal.—Dr. Smith Ely Jelliffe has just returned to New York to his practice after a year spent in study in Germany and France.

Sea Breeze Home Closed.—The Sea Breeze Fresh Air Home maintained by the New York Association for Improving the Condition of the Poor was closed on September 30. During the summer 22,687 women and children have been taken to this home for one-day stays and 4,171 for stays averaging between eight and ten days.

Good Service by Field Hospitals.—Occurrences along the line of march of the parades during the Hudson-Fulton celebration showed that the field hospitals were well organized and entirely efficient for the service they had undertaken. All were busy at one time or another. The majority of cases were those of persons who had fainted, though there were several instances of epileptic fits and a number of heat prostrations. The number of injured was not great.

Another Milk Depot.—Nathan Straus, whose work of supplying pasteurized milk for babies has entered on its eighteenth year, has added another milk station to those already maintained by him. This makes the eighth permanent depot which he maintains all the year around. In the year just ended the Straus stations have supplied 3,410,105 bottles of pasteurized milk and during the past summer at the stations in the parks and on the piers 1,523,251 glasses of pasteurized milk were served.

Buffalo

Medical College Opens.—The University of Buffalo began its sixty-fourth regular session Monday evening, September 27. Dr. Peter W. Van Peyma, professor of obstetrics, delivered the opening address.

Personal.—Dr. Herbert H. Glosser is taking a three months' post-graduate course at Vienna.——Dr. Herbert D. Pease has resigned as director of the state hygienic laboratory, New York State Department of Health.

NORTH CAROLINA

Gunshot Wounds.—Dr. P. L. Hagler, Birmingham, was shot and seriously wounded by William McIntyre recently.——Dr. J. Lewis Hanes, Winston-Salem, Pine Hill, while hunting, shot himself in the thumb, which was afterward amputated.

Warning Against Lithia Water.—The *Bulletin of the North Carolina State Board of Health* for August officially announces that "the water sold by the Buffalo Lithia Springs Water Company of Buffalo Lithia Springs, Va., and by Smith's Lithia Water Company of Oxford, N. C., has been found by three successive analyses made by the State Laboratory of Hygiene, to be dangerous to public health."

OHIO

Take Patients on Probation.—The State Tuberculosis Hospital, Mount Vernon, will be ready to receive patients October 15. All patients will be received on four weeks' probation.

Antituberculosis.—At the meeting of the Antituberculosis and Health League of Allen County, held at Lima, September 17, Drs. William E. Hover, Albert S. Rudy, William H. Parent and James B. Poling, Lima; George S. Weger and James R. Tillotson, Delphos, were elected trustees, Dr. James B. Poling, Lima, was elected secretary, and George E. Johnson, Auglaize, and Richard E. Jones, Gomer, were elected township vice-presidents. The trustees, by unanimous vote, indorsed Dr. William E. Hover, Lima, for president of the league.

Personal.—Dr. Estell H. Rorick, formerly superintendent of the Athens State Hospital and the State Institution for the Feeble-Minded, is reported to be seriously ill with lung disease at The Dalles, Ore.——Dr. William L. Jackson, Newark, is convalescent after a severe attack of ptomain poisoning.——Dr. Ernest S. Brooks has been appointed physician in charge of the Cleveland Tuberculosis Sanatorium, Warrensville, vice Dr. Joseph C. Placak, resigned.——Drs. John D. O'Brien and Henry C. Eyman, Massillon, have sailed for Europe.——Dr. Judson A. Hulse has been made school inspector of Akron, vice Dr. Dan M. McDonald, resigned.——Dr. Mason O. Wert, Poplar, sails for Europe October 12.

Cincinnati

Flag Day.—Superintendent Withrow of the Antituberculosis League announces that Flag Day will be held October 16, when it is expected to dispose of 100,000 large and small American flags, the proceeds to be used in carrying on the work of the league against tuberculosis in Cincinnati, and the establishment of a large tuberculosis pavilion at the branch hospital.

Personal.—It is announced that President Dabney of the Ohio-Miami Medical College will assume the duties of dean for the time being.——Dr. Frazier X. Monroe has received a government appointment and has been detailed for duty in the Canal Zone.——Dr. Oliver P. Holt was operated on recently for appendicitis at Rochester, Minn.——Dr. John L. Waffenschmidt is reported to be critically ill.

PENNSYLVANIA

State Society Election.—At the fifty-ninth annual meeting of the Medical Society of the State of Pennsylvania, held in Philadelphia, September 27-30, the following officers were elected: President, Dr. Theodore B. Appel, Lancaster; vice-presidents, Drs. Charles A. E. Codman, Philadelphia, Henry H. Riegel, Catasauqua, Joseph W. Albright, Muncy, and Charles W. Bachman, Reading; secretary, Dr. Cyrus L. Stevens, Athens; treasurer, Dr. George W. Wagoner, Johnstown; trustees, Drs. William A. Nason, Roaring Spring, John B. Donaldson, Cannonsburg, and David H. Strickland, Erie; and delegates to the American Medical Association, Drs. George W. Guthrie, Wilkes-Barre, Alexander R. Craig, Philadelphia, John B. Lowman, Johnstown, Horace G. McCormick, Williamsport, and Americus R. Allen, Carlisle. The next annual meeting will be held in Pittsburg.

Philadelphia

Personal.—Dr. J. William White has been elected a member of the Fairmount Park Commission.——Dr. Harry Lowenburg has been made instructor in pediatrics in Jefferson Medical College.

Reception to Dr. Cook.—At the conclusion of his lecture in Philadelphia, on September 29, Dr. Frederick A. Cook, the Arctic explorer, was entertained at a banquet by the Medical Society of Pennsylvania, then in convention.

Criticize City's Institutions.—The grand jury for the September term visited the city's penal and charitable institutions and found them generally in fair condition. They reported light and ventilation lacking to a considerable degree in some of the older buildings. They criticized the over-crowded condition at the Philadelphia General Hospital.

Health Report.—The total number of deaths reported for the week ended October 2, reached 390. This is a decrease of 50 from the number reported in the previous week and a decrease of 62 from the number reported in the corresponding week of last year. There were 134 cases of contagious disease reported with 18 deaths as compared with 128 cases and 9 deaths reported in the preceding seven days.

Abnormal Pupils to Receive Proper Care.—It is reported that there are 442 mentally deficient and physically abnormal children in the city's public schools and the authorities have planned to have these children committed to institutions where they can receive proper attention and treatment. This movement is the first step toward the abolition of special schools and the establishment of classes for backward and deficient pupils of the elementary grades. A committee of five psychologists has been appointed to look after this work by the superintendent of public schools, Dr. Simon S. Brumbaugh. Those who show the slightest traces of normality, or who can, by scientific methods, be put on a plane with the average child, will be treated at the psychologic clinic of the University of Pennsylvania.

SOUTH CAROLINA

Physician Enjoined.—In the case of J. W. Crawford, charged with the practice of medicine at Donalds, Abbeville county, without license, and under a temporary restraining order obtained from Judge J. W. Klugh, August 31, the court on September 4 held the medical practice act constitutional, and made the injunction permanent.

Personal.—Dr. Francis A. Coward has been placed in charge of the laboratory recently opened at Columbia by the State board of health.——Dr. J. R. Wilkinson, Charleston, medical missionary to China, of the Southern Presbyterian Church, sailed from Vancouver September 6.——Dr. J. William Folk, in charge of the Georgetown quarantine station, South Island, has resigned.——Dr. Louis C. Barbot, Charleston, received severe injuries in a runaway accident September 3.

TENNESSEE

To Care for Tuberculous Poor.—Dr. Henry P. Colle, president of the Knoxville Association for the Prevention and Relief of Tuberculosis, reports that the association will soon build an institution for the isolation and treatment of the tuberculous poor of that city.

Colleges Open.—At the opening of the medical department of the University of Chattanooga, September 22, the matriculation address was delivered by Major Charles R. Evans, dean of the law department.——The medical department of Lincoln Memorial University, Knoxville, formerly known as Tennessee Medical College, opened for the year, October 1.

TEXAS

New Cottages.—Managers of the state insane hospital have awarded the contract for two cottages for tuberculosis patients, to cost $35,000.

New Sanitary Code Adopted.—At the meeting of the state board of health, in Austin, September 14, the sanitary code was adopted and transmitted to the governor for his approval. The board decided to spend $15,000 on the state quarantine station.

Personal.—At the regular quarterly meeting of the Seventh Councilor District Medical Society, held in Austin, September 23, Dr. Washington A. Harper was elected president, vice Dr. Matthew A. Taylor, deceased.——Dr. Frederick W. Kirkham, formerly of Cuero, has moved to Brownsville, and has been appointed health officer of Cameron county.

Ruling on New Medical Statute.—The attorney-general's department has ruled that a physician licensed to practice in 1901, but who has no recent verification license, as prescribed by the act of 1907, cannot legally practice medicine by virtue of the license originally issued, but that it will be necessary for him to go before the present medical board, be examined, and obtain a license from the board.

VERMONT

New Sanitarium.—Dr. Grace W. Sherwood has purchased the Herbert Brainerd House, St. Albans, and will open a private sanitarium to accommodate 10 patients.

State Medical Society Meeting.—The ninety-sixth annual meeting of the Vermont State Medical Society will be held at White River Junction, October 14 and 15.

Medical Society Elections.—The Rutland Medical Reporting Club was organized September 9, with the following officers: President, Dr. Mark R. Crain; vice-president, Dr. William W. Townsend, and secretary-treasurer, Dr. Ray E. Smith.——At the annual meeting of Washington County Medical Association, held in Montpelier, September 21, Dr. Orlando G. Stickney, Barre, was elected president; Dr. Lester W. Burbank, Gabot, vice-president; Dr. Edwin A. Colton, Montpelier, secretary, and Dr. Louis A. Russlow, Randolph, treasurer.

Medical Staff Election.—At the annual meeting of the medical staff of St. Albans Hospital, September 22, Dr. John Gibson was elected president and Dr. George C. Berkley secretary. Drs. Edwin A. Hyatt and William B. Arnold, St. Albans, and Fred S. Hutchinson, Enosburg Falls, were appointed to arrange terms of service for the medical staff, to make weekly visits to the hospital, personally to inspect the sanitary condition of the building and grounds and examine the foods and medicine. Dr. Waldo J. Upton was elected a member of the staff of lecturers of the training school for nurses.

VIRGINIA

Colleges Open.—The annual session of the Medical College of Virginia, Richmond, opened September 14, Dr. Christopher Tompkins, the dean, delivering the address of welcome.—— The annual session of the University College of Medicine, Richmond, opened September 14.

Personal.—Dr. Stanley H. Graves, Norfolk, has been appointed a member of the State Board of Health, vice Dr. Charles R. Grandy, Norfolk, resigned.——Dr. W. H. O. McGehee, dean of the dental department of the University College of Medicine, Richmond, has resigned and will remove to Cincinnati, where he has been elected professor of operative and clinical dentistry, and superintendent of clinics in the Ohio College of Dental Surgery.——Dr. William R. C. Booker, Bristol, was seriously injured, September 1, by being thrown from his horse.

Medical Societies Meet.—At the annual meeting of the Tidewater Medical Society, held in Urbanna, the following officers were elected: President, Dr. William P. Jones, Urbanna; vice-presidents, Drs. J. W. Dorsey Haynes, Cobb's Creek; John N. DeShazo, Center Cross; Alfred C. Palmer, Richmond; and Claybrook Fauntleroy, Dragonville; and secretary-treasurer, Dr. George W. Brown, Saluda.——At the annual meeting of Elizabeth City County Medical Society, held in Hampton, Dr. J. Wilton Hope was elected president; Dr. William H. Howard, vice-president, and Dr. Harry D. Howe, secretary-treasurer.

Coroners' Association Meets.—At the meeting for organization of the Virginia Coroners' Association, September 21 and 22, the following officers were elected: President, Dr. Lucien Lofton, Emporia; vice-presidents, Drs. John W. Brodnax, Manchester, and H. Gilbert Leigh, Petersburg; secretary, Dr. McCandlish M. Moran, Pinners Point; treasurer, Dr. Joel Crawford, Yale, and executive committee, Drs. H. Gilbert Leigh, Petersburg; Edmund H. Lewis, Culpeper, and William H. Taylor, Richmond. The association recommended that a state law be enacted requiring the appointment of coroners for the 66 counties of the state in which there is at present no such officer for the protection of the people and investigation of suspicious cases, and that a law be enacted requiring all embalmers to use the same embalming fluid, which should be free from chemical poisons.

GENERAL NEWS AND COMMENT

Hospital Association Election.—At the annual meeting of the American Hospital Association, held in Washington, D. C., September 23 and 24, the following officers were elected: President, Dr. Herbert B. Howard, Boston; vice-presidents, Drs. John N. E. Brown, Toronto, Ont., and Dr. Wayne Smith, St. Louis, and Miss Mary L. Keith, Rochester, N. Y.; secretary, Dr. Warren L. Babcock, Detroit, and treasurer, Mr. Asa Bacon, Chicago. St. Louis was selected as the place for the 1910 meeting.

Society Meeting.—At the annual meeting of the American Electro-Therapeutic Association, held in New York City, September 28-30, the following officers were elected: President, Dr. Thomas D. Crothers, Hartford, Conn.; vice-presidents, Drs. Thomas H. Cannon, Baltimore, Md., and Frank E. Peckham, Providence, R. I.; secretary, Dr. J. Willard Travell, New York City; treasurer, Dr. Richard J. Nunn, Savannah, Ga., and board of trustees, Drs. Charles R. Dickson, Toronto, Ont.; Morris W. Brinkmann, New York City; Herbert F. Pitcher, Haverhill, Mass.; Francis B. Bishop, Washington, D. C.; Edward C. Titus, New York City; Fred H. Morse, Boston, Mass. The next annual meeting will be held in Saratoga in September, 1910.

Conference on Pellagra.—The National Conference on Pellagra will be held in Columbia, S. C., November 3 and 4, under the auspices of the State Board of Health of South Carolina. Physicians and sanitarians are cordially invited to unite with the local profession in the study of the disease. Although the malady is of comparative recent recognition in this country, it already has been reported from seventeen states and is assuming the proportions of a national public health problem. The conference will include not only addresses, papers and discussions, but a number of clinical cases will be presented, thus affording the profession an opportunity for study of the disease. More detailed information may be obtained on application to Dr. Charles F. Williams, Charleston, secretary of the board, and state health officer.

Vital Statistics of Cuba.—Dr. Matias Duque, Havana, Secretary of Sanitation and Charities of Cuba, in his report for August, gives the following report of vital statistics of Cuba for May: The number of deaths registered was 2,398, equivalent to an annual rate of 12.95 per 1,000. An increase was observed in the following diseases: Infantile diarrhea, circulatory diseases, meningitis, cerebral congestion and hemorrhage, tetanus, influenza and cirrhosis of the liver. A decrease was noted in tuberculosis, acute bronchitis, bronchopneumonia, and pneumonia, cancer, nephritis and typhoid fever. Of the decedents 740 were under 1 year of age, 275 from 1 to 5 years of age, and 1,383 from 5 to 8 years of age; 1,617 were white and 781 colored. During the month 6,732 births were reported.

Health of the Philippines.—In the report of the Bureau of Health for the Philippine Islands for the quarter ended June 30, Dr. Victor G. Heiser, director of health, notes the completion of the first collection of lepers from every province of the island, excepting Moro Province. During the quarter, 685 lepers were collected and transferred to Culion. The conditions at Culion have undergone a change for the better, due to improvement in environment and the experiment that has been made on some patients by the Chaulmoogra oil treatment. The investigation into the typical town with special reference to the presence of intestinal parasites, shows that about 10 per cent. of the deaths were from uncinariasis and about 95 per cent. from some intestinal parasite. The death rate for Manila for the quarter was at the annual rate of 29.55 per 1,000, the lowest rate recorded, with one exception, since American occupation. A number of buildings of the Philippine General Hospital, for which appropriation was made last year, are now actually under roof. The legislature has decided that the institution shall be a division of the bureau of health, and it will be managed and known as the Philippine General Hospital Division of that bureau.

Mississippi Valley Medical Association.—Extensive preparations are being made by the St. Louis Medical Society of Missouri and the physicians of St. Louis for the entertainment of the members of the Mississippi Valley Medical Association which meets in that city October 12-14. The municipal boat has been offered by the health officer and mayor for a visit to the city water works and a trip along the water front of the city. Several hundred seats have been secured at vaudeville theaters for one evening. An automobile ride has been arranged for the ladies accompanying the members, and many other functions are in process of arrangement. The subject of the symposium is to be "Exophthalmic Goiter," which will be participated in by Drs. S. P. Beebe, New York City; George W. Crile, Cleveland, Julius H. Jacobson, Toledo; Allen B. Kanavel, Lewis J. Pollock, Albert J. Ochsner and Arthur R. Elliott, Chicago, and Herman Tuholske, St. Louis. Among other important and interesting topics for discussion are "Pellagra," on which papers will be read by Passed Assistant Surgeon Claude H. Lavinder, U. S. P. H. and M.-H. Service, and Dr. Joseph J. Watson, Columbia, S. C., with exhibition of patients and "Uncinariasis," on which a paper will be presented by Dr. Charles Wardell Stiles, Washington, D. C., chief of the hygienic laboratory, U. S. P. H. and M.-H. Service.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Sept. 25, 1909.

Precautions Against the Importation of Cholera from Holland

Elaborate precautions have been taken against the importation of cholera from the continent. All vessels coming from Rotterdam are medically inspected at Gravesend and no passengers are allowed to land until their addresses of destination have been given. The vessels which convey large numbers of passengers are fitted with wireless telegraphy apparatus and messages will be sent to the health officer of the port of Lon-

don should any illness of the nature of cholera arise during the voyage. While in port the vessels are inspected daily and all their refuse is burnt. No drinking water will be taken on board at Hamburg and no water will be carried in the ballast tanks. While the vessels are in port at Rotterdam their decks are not to be washed with river water. If the outbreak extends to other parts of Holland from Rotterdam all the Dutch ports may be declared infected; arrangements have already been made for dealing with vessels ariving from Flushing. Vessels arriving from St. Petersburg are subjected to special supervision and many passengers arriving with insufficient addresses have been detained on board for inquiries. A Russian captain who allowed some detained passengers to land has been fined. Quarantine has been abolished in this country and a system of medical inspection and supervision of persons arriving from infected ports has been substituted.

Socialization of the Medical Profession

In Great Britain, as in all civilized communities, great development is taking place in the control of the state over public health and the medical profession is becoming much concerned as to the effect of the rapid changes on its interests. Recently the government appointed a commission to inquire into the working of the poor-laws, which has resulted in a most important report foreshadowing revolutionary changes in the poor-law system. As a large part of poor-law relief consists in medical treatment and a majority of the physicians in rural districts hold poor-law appointments and clubs, the profession is deeply concerned. The clubs are a form of contract practice; the members principally belong to the working class and make a small annual payment—about $1—which insures them medical advice and medicine during illness. Most physicians are glad to get these appointments, as they bring in a fixed income, unlike the income derived from private practice, which depends on a varying amount of illness and varying ability and willingness to pay. When the physician also holds a poor-law appointment, for which he always receives a fixed stipend, he is only too glad that the agricultural laborers should join his club, for otherwise they would probably go on the parish during illness and he would have to attend them without any additional payment. Now the report of the poor-law commission foreshadows great changes—a more extensive system of free medical relief by the state, a vast system of contract practice, an unprecedented restriction of private practice, constituting indeed a veritable socialization of the medical profession. Curiously, though, the medical profession is in politics very conservative, it has for many years been unconsciously a force driving in the socialistic direction. Public health legislation has been created and extended largely as a consequence of its advice and demands. The system of free and compulsory public education, adopted in its complete form only in recent years, has involved another socialistic consequence for which the profession is largely responsible. The folly of compelling the diseased or underfed child of the artisan to attend school for instruction which his physical condition renders him unfit to receive soon became apparent. The very conservative London county council, which came into power entirely on the anti-socialistic cry, has been driven to provide free meals for necessitous children. Now the problem is how to deal with the various ailments, such as ear disease, adenoids, defective vision, etc., which interfere with education. Two propositions have been discussed—to establish school clinics under paid medical officers for the treatment of the children, or by making a grant to arrange with the hospitals for treatment of the children. As the cost of the former would be enormous, the council has decided on the latter course and has already made arrangements with some of the hospitals. But the British Medical Association, which may be taken to represent the views of the medical profession as a whole, has condemned this proposal after a discussion at the recent annual meeting. The association characterized the proposal as an abuse of the voluntary charity of hospitals which were never intended for the purpose of assisting the state to do its duty, and also as very inadequate, for the work to be done is much greater than the hospitals could undertake in addition to their present duties. It might be said in reply, however, that most of the children belong to the very class which it is the duty of hospitals to assist. If the school clinics be established this will be another great step in the socialization of the profession, for the children who attend the government schools comprise the classes ranging from the very poor to those of the skilled artisan and the small shopkeeper—classes on which most of the profession depend. Further, it is only a short step from the free treatment of these children to the free treatment of their parents.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Sept. 22, 1909.

Mr. Harriman's Death and the Vienna Medical School

The news of the death of the American railroad magnate, who for some time was under the care of one of our best-esteemed professors in Vienna, has caused some unpleasant discussions in the papers. The charges of wrong diagnosis hurled at the Vienna physicians by some transatlantic journals have prompted the physician who was treating Mr. Harriman here to answer publicly. He asserted that the diagnosis (inoperable cancer of the stomach) was indubitable when he saw the millionaire the first time. It was important to keep the knowledge of the true state of things from the unhappy man; but the American physicians accompanying Mr. Harriman were fully instructed here, if they needed any instruction at all. Mr. Harriman was sent, on the advice of the Vienna physician, to a diagnostic sanatorium near Munich. This again was complained of by the Austrian papers as being unfair to the Austrian sanatoriums, which could solve the question "cancer or no cancer" equally well. The reason was given that the physician, coming from Germany, still adhered to German places. Anyhow, the entire discussion was disgusting and proved once more the truth of the old principle: "The less one speaks of his patients to laymen, the better."

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 16, 1909.

Overcrowding of the Medical Profession in Germany

The unfavorable economic situation of the medical profession in Germany is emphasized by new statistics in which the disproportionately greater growth of the medical profession as compared with the population since the year 1885 is exhibited. While the population of the German Empire from 1885 to 1907 increased somewhat more than 32 per cent., the number of licensed German physicians increased more than 102 per cent. (in 1885, 15,764; in 1907, 31,864). In 1885 there was one physician for 2,963 inhabitants; in 1907 one to only 1,973—a proportionate increase three times as great as that of the population. To this must be added the fact that through the social legislation the number of patients available for private practice has been extraordinarily limited. In 1885, 4,294,173 persons were insured against illness; in 1907, on the other hand, the number was 11,721,796.

Personal

Prof. H. Kossel, director of the hygienic institute at Giessen, has received a call to Heidelberg in the same capacity, and will move thither in April, 1910. As is well known, his elder brother, the distinguished physiologist, Prof. A. Kossel, is employed at the same university.

September 2, Prof. V. Hensen, the well-known physiologist at Kiel, celebrated the semicentennial of his doctorate.

As a result of a fall, Professor Jaffé, chief surgeon of the city hospital at Posen, died September 2.

September 5, Dr. Agnes Hacker, one of the oldest and most noted women physicians, died here in Berlin. Among other positions, she held the presidency of the association for establishing a woman's hospital in Berlin.

Schools for the Deaf

At the Budapest congress, Professor Hartmann, the head of a department of the Berlin Rudolf Virchow Hospital, gave an address on schools for the deaf. Hartmann learned by investigation that there is a not inconsiderable number of children in the public schools who remained for years in the lowest classes on account of a pronounced difficulty of hearing, are regarded as feeble-minded, and are retarded in their intellectual development, and he succeeded seven years ago in having established by the support of the city authorities of Berlin a special course of instruction for children with marked difficulty of hearing. At present there are in Berlin 17 classes for the partially deaf. Experienced instructors of the dumb, each of whom has charge of only ten children, act as teachers. The principals of the schools send the children who, on account of deafness, are not making progress, for investigation, accompanied by the teacher. In the presence of the director of the school for the deaf, the children are individually examined. In many cases it is ascertained that the deafness depends on a disease of the ear that may be improved or cured. Among the children received 28 per cent. were still affected with suppuration of the middle ear and 52 per cent. with growths in the nasopharynx. By determining the children's power of hearing

it has been shown that many, in spite of a high grade of dulness of hearing, were still capable of profiting by the ordinary instruction. The degree of the power of hearing, therefore, is not alone sufficient to decide as to admission into the schools for the deaf. A very important factor is the ability of the child to learn. A great injustice would be done to those hard of hearing if they were classed with the feeble-minded. Furthermore, the deaf must be completely separated from the dumb. The observations made at the examination for admission and at later examinations, showing that a considerable number of the affections of the ear are amenable to treatment, indicate that there is an urgent demand for the examination of the deaf by a specialist on their admission into the school.

The Campaign Against Tuberculosis

The city of Charlottenburg has acquired a large tract of woodland in the neighborhood of Berlin as a site for a hospital for the treatment of patients with advanced tuberculosis. In this institution pulmonary invalids are to be received, whose removal from their homes is necessary in the interest of the public health. If possible, the patients are to remain in the hospital as long as they live. In addition, mild cases of lung diseases are to be received, especially such as are fit for the sanatoriums but cannot be admitted for lack of room, and also such as have been discharged from the sanatoriums but still need supervision. Two hundred beds are provided with the possibility of expansion to 300 beds. After the erection of this new tuberculosis hospital only such cases of consumption are to be received in the Charlottenburg city hospital as must be taken in on account of sudden severe illness or those that are temporarily or permanently unfit to be moved. By this plan the city of Charlottenburg is carrying out the suggestion of Koch and other authors to render harmless by permanent confinement in a hospital such advanced cases as cannot be isolated in their homes so as not to endanger their healthy neighbors. The success of the campaign against tuberculosis in Germany in late years is shown by the following recently published statistics on deaths from tuberculosis in 350 cities of the German empire with 15,000 and more inhabitants:

Deaths from pulmonary tuberculosis:
In 1899, 22.6 per 10,000 inhabitants living.
In 1904, 19.3 per 10,000 inhabitants living.
Deaths from tuberculosis in general:
In 1905, 22.3 per 10,000 living.
In 1908, 19.2 per 10,000 living.

The question of institutions for the care of pulmonary invalids was taken up at the annual meeting of the German Public Health Association *(Deutsches Verein für öffentliche Gesundheitspflege)* a few weeks ago. No new points were made in this discussion, as, in general, the whole tuberculosis question has temporarily fallen into a rut.

The Significance of the Trachoma Corpuscles

The etiologic signficance of the trachoma corpuscles, like that of the *Spirochæta pallida*, was considerably shaken at the Budapest congress. As is well known, Greeff and von Prowazek-Halberstädter have found peculiar corpuscles in the conjunctivas of trachoma patients, to which they attribute an etiologic as well as diagnostic importance. Prof. B. Heymann reported investigations which he had made in the Breslau Hygienic Laboratory, under the direction of Professor Pfeiffer, in which he found these corpuscles in a considerable number of other conjunctival diseases. Of 9 cases 5 were fresh trachoma lesions and 4 were cases of gonorrheal ophthalmia neonatorum. Heymann, in his article recently published in the *Deutsche medizinische Wochenschrift*, comes to the conclusion that it is not practicable to assert that the corpuscles of Prowazek are specific for trachoma, so long as we have no means of differentiation between them and the corpuscles found in gonorrhea, and that the Prowazek corpuscles are of diagnostic value only when all suspicion of gonorrhea is excluded. But even if these structures are specific for trachoma, no conclusion as to their etiologic relation to that disease should be drawn.

Epidemics of Poliomyelitis

Epidemics of poliomyelitis like those in Sweden in 1905 and last year in Austria have broken out in several places in Germany within a few weeks. Such an epidemic was first reported from Hamburg and Schleswig-Holstein. Lately cases have occurred in the Rhine country and Westphalia. Now an epidemic is prevalent also in the province of Brandenburg and in Hesse. It affects young children almost exclusively, in whom paraplegias, hemiplegias and monoplegias are observed. In one case a superior polioencephalitis also occurred. By an order of the ministry of education (*Kultusministerium*) Professor Krause, director of the policlinic at Bonn, was sent to Westphalia to investigate the cause and extent of the disease.

Sale of Medical Practice

By a decision of our highest court, the German Imperial Court (*Deutsches Reichsgericht*), a contract for the sale of a physician's practice is opposed to good morals and therefore invalid. A short time ago the Swiss Federal Court (*Schweizer Bundesgericht*) reached an opposite decision. The Swiss decision is to the effect that the disposal of a physician's practice cannot be regarded as illegal, but a physician who has paid a definite price for a practice cannot later dispute the contract on the ground that it is an unethical transaction. To be sure, the physician has ideal duties to perform toward his clientele, but, on the other hand, the calling of the physician has its material side, and these material interests, like those of other trades, may become the subject of a contract. Just as no one has a right to complain of the physician because he charges a fee for his services, so no objection ought to be made if he accepts a price from his successor for his introduction and delivery of his practice.

BUDAPEST LETTER

(From Our Special Correspondent)

BUDAPEST, Sept. 10, 1909.

[An account of the scientific proceedings of the Congress will be found in the Department of Society Proceedings.]

The Political Incubus

Looking back over a number of international scientific congresses I can hardly remember a congress at which, as to-day at Budapest, the atmosphere was so heavily charged with political considerations. There was a good deal of politics at Washington last year at the Tuberculosis Congress, and, strange to say, the fight was much the same. Of course I am fully aware that 90, I hope 99 out of every 100 medical men who read these lines will exclaim that science knows no frontier, that science is not political, that science in the service of humanity seeks only for truth. In 1889, the Paris Universal Exhibition and some of the scientific international congresses were partly boycotted because these were held in celebration of the centenary of the great French revolution. Nevertheless, in the great hall of the Paris Sorbonne, before some three thousand representatives of the science and art of healing, Pasteur and Lister met face to face on the platform and then, with one common accord, embraced. That one thrilling moment was worth all the politics that have ever been spoken or written; the governments had sought to boycott the French nation and its government, but the greatest benefactors of the human race embraced.

Are Government Delegates Impartial?

It is unfortunately an actual fact that it is impossible to keep politics completely out of these congresses. There are, however, two sorts of politics; one which has a legitimate right of entry and the other about which not so much as a whisper should be heard. Of the former, I spoke at some length in my last letter. It is the politics of social reform. Nothing will prevent medical men, hygienists and chemists from declaring that we must have pure air, pure water and unadulterated food. Yet how many political fights have taken place to secure such legislation as we possess, which purports to provide these fundamental necessities of existence! Indirectly all scientific congresses must deal with politics of this description. Indeed, what would be the use of proclaiming the basic principles on which health is to be preserved if nothing practical is to be done to ensure their application?

War and the Americans at the Madrid Congress

There are also acute political situations that arise at the great international congresses of medicine and the allied sciences that cannot possibly be avoided, at least so far as the members of the congress themselves are concerned. One of the most exciting which I have witnessed was at Madrid where the International Congress of Hygiene and Demography met just at the very moment when the Cuban war broke out between the United States and Spain. In the very heart of Madrid, close to the *Puerto del Sol*, an American insurance company possessed a very fine building which it had thought fit to decorate with American eagles carved in stone. One of these spread its wings in a particularly aggressive manner, so some excited Spanish patriots went up and hacked at the sculpture till it fell down with a crash into the street below. But it so happened that, in its fall, the American eagle struck the wooden staff of a Spanish flag and down came the flag as well as the bird. For so superstitious a people as the Spaniards this was an evil omen. What, however, was my concern to observe immediately after this incident, a group of American army and navy surgeons strolling through this very neigh-

borhood in full uniform. To the honor of the Spanish populace be it said, not a stone was thrown, not a threat or an insult was proffered, a dignified silence was maintained, thus showing once more that the poorest classes in Spain can set the world an example in matters of dignity and courtesy. This incident, I trust, will be remembered; and, when this self-same congress meets next year in the United States the Spanish delegates will be made to feel that their American hosts can appreciate how the American delegates were treated in Madrid under very difficult, trying and painful circumstances. Though war was declared before the congress was over not a single American met with any rudeness at the hands of the Spanish.

War Dangers and the Budapest Congress

At the Budapest congress, if we have not had war we have had such menacing rumors of war that, at one moment it was very doubtful indeed whether the congress would be held. Undoubtedly, if the present political situation could have been foretold three years ago at Lisbon, no one with any sense of prudence would have accepted the Budapest invitation. But really we who voted for Budapest at Lisbon in 1906 never dreamed that by 1909 Austria-Hungary would have torn up the treaty of Berlin and taken forcible possession of Bosnia and Herzegovina. For a long time it seemed as if war were inevitable, and though peace has been maintained, what to many would have seemed the most interesting after event of the congress has been spoiled. Just as many medical men went to the Madrid congress because they hoped to visit Andalusia afterward and contemplated the beauties of Seville, the Alcazar and Granada, so others were tempted to Budapest by the hope that, after the Congress, there would be an excursion through the Balkan Peninsula to Constantinople, coming home via Athens. This is exactly what happened in 1894, and well I remember the magnificent receptions we had and the wonders we saw. But nothing of the sort is possible to-day. The result of this trying political situation is that there have been no official excursions. As individuals, of course, members of the Congress could go wherever they liked, paying the ordinary price and guided by the ordinary excursion agencies. But the governments of the countries concerned made no offer, proposed no sort of reception or entertainment. Thus the political situation weighed heavily on the congress and this through no fault or blunder of the congress itself.

Racial Conflicts Within the Congress

The Roumanians, as is well known, for they sent out a circular to all the medical press, boycotted the congress, because Mme. Vlad, the wife of a Roumanian deputy in the Hungarian parliament, was sent to prison for urging Roumanian children to persevere in the study of their mother tongue. It would take much time to discuss this question of languages which is somewhat wide of the mark. There is a great deal to be said on both sides. By order of the emperor, Mme. Vlad was released, and versions differ as to the extent of her offense, if offense there was. But what concerned the congress even more than this incident, though it deprived us of the presence of the medical practitioners from the neighboring state of Roumania, was the circular addressed to all the German physicians attending. It was posted from Vienna and issued by the society for the maintenance of the German nationality in Hungary. The circular commenced by stating that it understood the German delegates to the congress had been invited to a banquet at which the principal host is to be the minister of public worship and public education, Count Apponyi. The circular then abused, in violent language, the minister for practically excluding the German language from the elementary schools and accused him of making liberal speeches abroad while carrying out the most illiberal policy at home. The circular concluded: "We anticipate that we shall appeal with success to the national sense of honor of all Germans when we ask you, one and all, to refuse as one man, this man's invitation. Nevertheless, we are fully convinced that the scientific side of the congress will suffer no injury through such a manly action on your part." Now the awkward thing is that, instead of throwing aside this extravagant manifesto, a large number of German medical men who had accepted the invitation to dinner, swore off at the last moment. Only a few sent lame excuses, several did not even do that much. On the other hand, I would hasten to add that the Germans, after twenty-four hours' reflection, sobered down considerably and many were present the next day at the Park Club where Count Apponyi gave a brilliant reception and supper. This incident shows how largely political questions intrude on scientific congresses. Then we have the Poles. A terrible blow has been struck at them, and this was the doing of the congress itself. In voting for the creation of a permanent commission for the organization of these congresses, the word "nation" was struck out and "state" substituted. Thus the little state of Luxenburg has a member on the commission, but the Polish delegate, who claimed to speak on behalf of 24,000,000 Poles, was ruled out; because, if there is a Polish nationality there is no Polish state. This vote will not fail to encourage the Hungarians who are endeavoring to prevent the separate existence of the Germans, Slovaks, Roumanians, Ruthenians, Croatians and Servians, though together they equal about half the population of Hungary. In this war of races, religions, languages and, at the back of it all, of economic interests, what has the medical profession and what have international medical congresses to say? "Nothing at all," is, of course, the most obvious and certainly the easiest answer. But is it the true answer?

Where a Congress Cannot Be Neutral

The language question does not concern us, but all the week we have been shown institutions connected with education and the medical relief of the poor. Surely the language question is at the foundation of the education question; and if medical men are not to be interested in the general education of the peoples and nations they visit, I am sorry for medical men. Everything that interferes with the mental and physical evolution of man, interests the medical profession. Wherever children are overcrowded and starved in school, whether these schools be religious or secular, there the medical profession is concerned; and how appalling, how deplorable is the state of elementary education in Hungary! Where economic conditions are such that there is not even a sufficient subsistence wage to be earned, there the medical profession is concerned; and in America, something is known of the starvation which has driven so many Hungarians over the Atlantic. The agrarian party, the great landed aristocracy which holds Hungary in its grip, presented to the congress a glowing picture of the progress that has undoubtedly been accomplished. But the true student will look below the surface. A model operating theater at Budapest with an extravagant display of modern and expensive surgical instruments does not mean that throughout the country similar perfection prevails. Nor must a congress allow itself to be utilized as a means of fostering the belief among other nations that the country where its meetings are held is the home of all the virtues and all progress. This, I trust, will not be the aim of the organizers of the next congress of hygiene when it meets in Washington, or the next congress of medicine when it meets in London.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Sept. 16, 1909.

The White Cross Society and Food Adulterations

Two years ago a society called the Universal White Cross Society of Geneva (*Société Universelle de la Croix-Blanche de Genève*) was founded to unify efforts against tuberculosis, cancer, syphilis, epidemic, infectious and parasitic diseases, alcoholism and morphinism, food poisonings, diseases of poverty, etc., made by national and international institutions throughout the entire world, thus affording a permanent bond of union, while leaving each one in absolute internal and local independence. For the purpose of securing international agreements for the repression of adulterations in drinks, foodstuffs and agricultural products, the society organized last year the first International White Cross Congress at Geneva and this year it is organizing a congress which will be held at Paris, October 17-24.

The Geneva congress took up the problem of adulterations from a new point of view. It endeavored to define, not adulterations, but the normal type of each form of foodstuff. In all countries striving to suppress food adulterations legislation has been passed and chemical analysis called on to establish adulteration, regardless of the fact that often an analysis of an adulterated food has no practical value unless compared with an analysis of the clearly defined normal type. The Geneva congress having defined these types, the Paris congress will consider the operations necessary to the manufacture of commercially pure foodstuffs.

The congress will meet under the patronage of the heads of several of the departments of government and will be divided into three sections. The first, presided over by M. Müntz, member of the Academy of Sciences, will be concerned with the technology of food. The second, presided over by Dr. Landouzy, dean of the Paris medical school, will examine from the point of view of hygiene the questions discussed by the first section. The third, presided over by M. Guignard, director

of the Superior School of Pharmacy and member of the Academy of Sciences, will be concerned with adulterations of drugs, chemical products and mineral waters.

Night Medical Service at Paris

Apropos of the fact that recently the father of a child who fell sick during the night was unable to find a physician soon enough, some political journals have criticized our night medical service severely. In a general way, however, it may be said that this service is very satisfactory and its workings are sufficiently ingenious to merit description.

This service begins at 10 p. m. and ends, during winter, at 7 a. m., during summer at 6 a. m. Every physician who desires to be placed on this service has himself inscribed on the list of "night physicians." Any one wishing to call a night physician has to address himself to the nearest police station. A police agent then accompanies this person to the residence of the physician, follows the latter to the patient's home, and, the visit being concluded, takes him home again. The service is not free. For each visit the physician receives $2 (10 francs), paid out of the municipal funds. According to the means of the patient, as discovered after inquiry, the administration requires from the patient reimbursement of the physician's fees, or assumes the cost itself.

Obstetric cases are taken care of by midwives, whose fees are $4 (20 francs) for each delivery.

The night medical service has been organized in this way since 1876. Ten years after its organization a night pharmaceutic service was also created. The pharmacists, enrolled at their request, receive 30 cents (1 franc 50 centimes) as a fixed return for each order they fill in addition to reimbursement for the cost of the drugs.

The number of physicians participating in the night medical service at present is about 596; of midwives, about 477; and of pharmacists, about 468. Last year there were 14,000 night medical visits, for which the doctors received $28,000 (140,000 francs). Out of this sum the administration received from the private individuals who required physician's services, only $6,000 (30,000 francs).

New Treatment for Obesity

All the methods of treatment of obesity rest on the double rule of diminishing food and increasing elimination; but chiefly on the former, since most obese persons have depleted nervous systems and are incapable of accomplishing the necessary effort to increase their organic outlay by muscular work. Dr. Bergonié, professor of biologic physics and medical electricity at the Bordeaux medical school, has met the difficulty, obtaining artificially intense muscular activity by causing an alternating electrical current of 8 to 12 volts and of an intensity of 50 milliamperes to pass through the body of the patient with a frequency of 40 to 100 per second. The patient reclines over a large electrode, the other electrode covering the greater portion of the anterior surface of the body. Under these conditions, the passing of the current is absolutely painless. Under the influence of the current all the important muscular masses (thighs, calves, buttocks, back, shoulders) are animated with muscular contractions sufficiently energetic to elevate the body, even when weighted down at the level of the thighs by a weight of 88 pounds (40 kilos) or more.

According to Dr. Bergonié's recent communication to the Academy of Sciences (*Académie des sciences*), and to the French Association for the Advancement of Sciences (*Association française pour l'avancement des sciences*), this treatment will cause a very rapid diminution of the weight of fat, if the patient is careful to maintain his diet at a ratio inferior to that which corresponds to his muscular outlay; it will, moreover, increase strength and resistance to fatigue.

Pharmacology

WATERBURY'S METABOLIZED COD-LIVER OIL COMPOUND

Report of the Council on Pharmacy and Chemistry and Laboratory Contribution on Which It Is Based

The following report has been adopted by the Council and its publication directed.

W. A. PUCKNER, Secretary.

To the Council:—Your committee on pharmacology has read with interest the contribution from the Association's laboratory on Waterbury's Metabolized Cod-Liver Oil Compound. The report shows that misleading and false statements are made in regard to the composition of the product and also that exaggerated and unwarranted claims are made for its therapeutic value. In view of the attempt of the Waterbury Chemical Co. to create a false impression in regard to the therapeutic value of the composition of its product, it is recommended that the following report be adopted and published:

The Council believes that there is a preponderance of evidence to indicate that whatever therapeutic value cod-liver oil has, that value depends chiefly, if not entirely, on its fat (oil). In the opinion of the Council, the word cod-liver oil should not be used in connection with any preparation unless it consists to a large extent (25 per cent. or more) of cod-liver oil. Since Waterbury's Metabolized Cod-Liver Oil Compound contains no appreciable quantity of cod-liver oil, the name is incorrect and misleading, and as a cod-liver oil preparation it is believed to be wholly valueless. The Council has previously voted that Waterbury's Cod-Liver Oil Compound be refused recognition because of conflict with Rules 1 and 6.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

Waterbury's Metabolized Cod-Liver Oil Compound

W. A. PUCKNER AND L. E. WARREN

A full page advertisement of Waterbury's Metabolized Cod-Liver Oil Compound appeared in the *Iowa Medical Journal*, March 15, 1909, in the form of a letter purporting to give the results of an analysis of the product made for the firm by a Chicago chemist. In this letter-advertisement the chemist states at the outset that the results of his examination "are somewhat at variance with the statements made in THE JOURNAL." These statements he quotes as follows:

1. It is a clear liquid and no globules of oil are seen under the microscope. It is therefore not an emulsion.
2. It is of acid reaction when mixed with water and remains clear when strongly acidified. Hence it does not contain a soap, and is not a saponification of fat.
3. It mixes with water without precipitation, hence, it can not contain more than traces of a fatty acid.

The chemist admits in his letter to the firm that his analyses verify statements 1 and 3, but regarding statement 2 he says: "I find that your preparation is acid in reaction, but when strongly acidified gives a distinct turbidity within 10 minutes and a voluminous precipitate within 1 hour. This precipitate is shown to consist of fatty acids of cod-liver oil, which are thrown down by the splitting of the soaps, on acidifying either with sulphuric or hydrochloric acid." From these results he states that to him it seems that the "preparation does not deserve the statement that it contains no soap, as there is no question whatever of the presence of cod-liver oil."

While in the letter published in this advertisement the chemist claims to have demonstrated the presence in the product of "saponified cod-liver oil" he *omits to mention the quantities* of the soap present. In the article that originally appeared in THE JOURNAL (Oct. 13, 1906), in addition to the three paragraphs quoted by the chemist, the following statements were made:

"By these simple tests a physician is easily able to demonstrate that the preparation does not contain cod-liver oil. It is therefore valueless for the purpose of nutrition for which we give the oil. More careful analysis confirms the results of these tests and shows that it contains no fat or fatty acids (except the merest traces) . . ."

At the time these statements were published in THE JOURNAL, the *St. Paul Medical Journal*, October, 1906, contained an advertisement for Waterbury's Metabolized Cod-Liver Oil Compound, which contained this statement:

"The only tasteless preparation on the market which contains Cod-Liver Oil in its entirety. The metabolized product is obtained by the action of digestive ferments on pure Cod-Liver Oil."

In the *Ohio Medical Journal* of Feb. 15, 1907, there appeared in the form of an advertisement what purported to be an analysis of Waterbury's Metabolized Cod-Liver Oil Compound by Prof. C. N. Kinney of Drake University. While Professor Kinney made a quantitative analysis of the preparation the quantities were omitted from the analysis as published. A footnote added by the Waterbury Chemical Company called attention to this fact and closed as follows:

"Any physician who is not satisfied with the analysis we will be only too glad to furnish the complete analysis by our representatives."

If this weirdly constructed sentence meant anything, it meant that the complete analysis would be furnished on request. Such requests to the company, however, from various sources failed to elicit the information required nor was the "complete analysis" forthcoming. The inference to be drawn is fairly plain.

In a circular accompanying the product as sold at present, this statement occurs:

WATERBURY'S
METABOLIZED COD LIVER OIL COMPOUND
WITH CREOSOTE AND GUAIACOL OR PLAIN

DOES CONTAIN COD LIVER OIL
DOES ALLAY FERMENTATION
DOES AID DIGESTION
DOES ASSIST ASSIMILATION
BUT DOES NOT DISTURB THE STOMACH

As previous examinations disclosed only the merest traces of cod-liver oil in the product while claims were made that it "represents cod-liver oil in its entirety," and in view of the fact, too, that present advertisements emphatically declare that cod-liver oil is present in the preparation as now sold, it was thought best to examine some of the preparation with especial reference to the quantities of fatty acids from cod-liver oil.

The results of the examination, the details of which are given below,[1] are briefly as follows: The total quantity of acids isolated amounted to about 0.3 per cent., and of this amount about two-thirds was *salicylic acid*. Thus it appears from the examination of the specimens bought on the open market that the preparation contains at most but 0.1 per cent. of the fatty acids from cod-liver oil, a totally insignificant quantity.

Notwithstanding the protestations by the manufacturers, in the form of published analyses and circulars, it is seen that the statements published in THE JOURNAL, Oct. 13, 1906, p. 1207, are essentially substantiated; it is further evident that the product does not deserve to be designated as a cod-liver oil preparation. To obtain a medicinal dose of cod-liver oil the patient would be compelled to swallow the contents of a bottle of this mixture, and as, the product contains 11 per cent. alcohol the patient who did so would probably experience a degree of exhilaration not referable to cod-liver oil.

1. A trade package of Waterbury's Metabolized Cod-Liver Oil Compound was purchased in the open market and examined in the Association laboratory. The product was a pale brownish-yellow, very slightly turbid liquid having an acid reaction and a malt-like odor. The odor was in no way suggestive of cod-liver oil or of cod-liver oil preparations. When strongly acidified with hydrochloric acid no precipitation or increase in turbidity was observable at once as would be the case were soaps present in appreciable amounts. On standing over night the acidified solution gave a flocculent precipitate. On shaking the acidified solution with ether-chloroform mixture and evaporating the solvent, a brownish, partially crystalline residue was obtained, the greater proportion of which appeared by qualitative tests to consist of *salicylic acid*.

ETHER-CHLOROFORM-SOLUBLE MATTER: A portion was strongly acidified with hydrochloric acid and extracted with an ether-chloroform mixture. The solvent was washed with water, evaporated, the residue dried at 98 C. and weighed; 500 c.c. of the product gave 1.5222 gm. or 0.3044 gm. per 100 c.c. Attempts to separate the salicylic acid quantitatively from the fatty acids by crystallizing the former from hot water were not entirely successful.

FREE FATTY ACIDS—SALICYLIC ACID: The ether-chloroform-soluble residue was treated with hot water and filtered. The residue on the filter was dissolved in warm alcohol, the solvent evaporated to dryness, the residue treated with hot water to remove salicylic acid, and filtered. The undissolved residue on the filter was dissolved in warm alcohol, filtered and the filtrate evaporated to dryness, the residue dried and weighed as free fatty acid; 500 c.c. gave 0.0362 gm. in the first separation. The first crop of salicylic acid crystals, which separated from the hot water filtrate on cooling, was filtered out, the filtrate evaporated to small bulk and allowed to crystallize a second time. The first and second crops of salicylic acid were united, dried at 60 C., and weighed; 500 c.c. gave a total of 0.8421 gm. salicylic acid, or 0.1684 gm. per 100 c.c. A second yield of fatty acids was obtained from the filtrate from the salicylic acid separation by the process employed for the first, 0.0204 gm. being obtained. Total fatty acids isolated amounted to 0.0566 gm., or 0.011 gm. per 100 c.c. This residue gave the Pettenkoffer test for bile products thus indicating the probable presence in the preparation of traces of products derived from cod-liver oil.

The filtrate, from which the fatty acids and salicylic acid had been separated so far as possible, was evaporated to dryness, the residue dried at 98 C. and weighed. A residue of 0.2595 gm. was obtained. This residue did not give Pettenkoffer's reaction for bile salts. It consisted of salicylic acid, free fatty acids and undetermined substances. Since 0.8421 gm. salicylic acid was separated from the residue or 55.3 per cent. of the total, it follows that not more than 0.6804 gm. or 44.7 per cent. of the initial residue can possibly be free fatty acids, or 0.13 per cent. as calculated on the entire sample. This value is evidently much too high as it includes everything in the initial residue not obtained as crystallized salicylic acid. It was noticed during the examination that whenever a fatty acid residue was dissolved in alcohol a noticeable residue remained which was also insoluble in water. Adding the several residues obtained, 0.8421 gm., 0.0566 gm. and 0.2595 gm., the sum of 1.1582 gm., is obtained. Subtracting the sum from 1.5222 gm., the initial residue, a loss of 0.3640 gm., is noted. As a check on the above the total acids were determined in a sample of 100 c.c. An ether-chloroform soluble residue of 0.330 gm. was obtained.

DR. CURRY CANCER CURE COMPANY

The Exploiters of a Cruel Fraud Put Out of Business by the Postal Authorities

In one of the chapters in *Collier's* "Great American Fraud" series by Mr. Adams, the "cancer cure" quack was shown up.[1] Among the numerous humbugs in this line of business, Dr. G. M. Curry, of Lebanon, Ohio, was apostrophized under the caption, "An Ananias of Quackdom," as follows:

"I don't want to overrate Dr. Curry in his own department of human activity, but he seems to me, on the whole, one of the most eminent all-around liars I have encountered anywhere in Quackdom. According to his own statements, Dr. Curry has discovered not only the germ of cancer, but also a sure cure for it."

This and much more did Mr. Adams have to say about Dr. Curry. Attention was called to the fact that in his enterprise Curry had the support of Lebanon's "best citizens"—the county treasurer, the sheriff, the recorder, the auditor, a judge, two attorneys, and two bankers, to say nothing of several other prominent inhabitants.

Said the élite: "Dr. Curry is no quack. His remedy is no fake. Both are entitled to the fullest confidence of cancer sufferers and Lebanon is proud of his success." Later in the series Mr. Adams told how valiantly the Lebanon newspapers came to the defense of Curry and his cruel fake. Nevertheless, even as long ago as July, 1906, Mr. Adams ventured this opinion: "Dr. Curry *is* a quack. His remedy *is* a fake. And the highly respectable citizens who bolster it are, giving them the benefit of the doubt, the dupes of an arrant swindler." Now, three years later, comes the United State Government in the person of Assistant Attorney-General Goodwin, and says some equally unkind things about the business which Dr. Curry built up. From the report which Mr. Goodwin transmitted to the Postmaster General, we abstract the following:

THE CURRY CANCER CURE COMPANY

This company was engaged in treating, through the mails, patients afflicted with cancer. E. W. Ramsey was its secretary and manager and the advertisements informed prospective patients that their letters might be sent to him if they preferred, in order to insure secrecy. What the company claims for its cure is indicated by the following quotations:

"Cancer cured in 10 days—a discovery that has startled the medical world. I have discovered what the medical world has been looking for, for years. A sure cure for cancer, so sure that it can be absolutely guaranteed. This I do and I can prove. I have cured hundreds of the most horrified cases in from 10 to 20 days after celebrated physicians and surgeons had given up all hope of saving them."

When a victim answered an advertisement, pamphlets and testimonials were sent to him, together with a question blank, on which he was to indicate the symptoms of his disease. In a circular letter the statements were made:

"It certainly gives us pleasure to be able to say to you that we have a positive cure for this, one of the most dreadful diseases that afflicts the human race. We are sending you free the necessary information that will show you how to cure yourself at home in from 10 to 20 days without the aid of a physician or surgeon and at little expense.

1. See pages 77 and 116, "Great American Fraud" pamphlet.

"The disease of cancer baffled the skill and science of the medical profession for centuries and was always considered an incurable malady. Now the discovery of the Curry method of curing and removing cancer, root and branch, is considered by many medical men to be one of the most important advancements in medical science of this age. By means of this treatment no trace of the disease is left to propagate any further growths or again endanger the life of the sufferer. We have cured hundreds and hundreds of cases of the most malignant and aggravated form where hope had been all but permanently abandoned by the sufferer and the case about to be pronounced incurable.

"If you faithfully follow our directions this treatment should absolutely cure you, remove all traces of the cancer poison from the blood, and prevent you from either suffering further yourself or transmitting the horrible malady to your descendants and causing untold suffering in future generations."

Attention was called to the fact that it was not necessary to come to the "sanitarium" in order to be cured. The company has "perfected a home treatment, so that you can cure yourself of your cancer just as well right in your own home." As a sample of some of the claims made, we may quote:

LYING CLAIMS

"The most desperate cases successfully treated by the Curry cure."

"The percentage of deaths from cancers which have been treated with the Curry cure is absolutely down to nothing."

"The Curry Cancer Cure has stood the test. The anti-toxin for diphtheria was an immediate success because it could stand the test."

"If you have a cancer or a suspicious growth on any part of your body act now before it is too late. If your cancer is far advanced you may die from it in a month or in a week. You can not tell what moment will be your last. After you have used the treatment for a day or two and you find that your pains are gradually leaving you, that the cancer is diminishing in size and that the soreness and bleeding is fast disappearing then you will know that death has been cheated and instead of the grave there awaits you more years of health, sunshine and happiness. Then, too, you will realize why the Curry Cure stands foremost among the world's great discoveries."

FOLLOW-UP LETTERS

The victim was fully informed that by answering the questions on the blanks sent him the company would be able to study his case "from the standpoint of successful specialists." If no reply was received to this letter, the company again wrote the prospective patient, urging him to send in the question blank properly filled out, immediately, and impressing him on the danger of delay. If this brought no answer another letter was sent to him telling him that the company had taken a deep-seated interest in his case and felt certain that it could cure him. If a reply was still not forthcoming, another letter was sent, asking the patient to explain the delay and telling him that he probably would have been cured months ago if he had but cast aside prejudice and answered the questions submitted to him.

In those cases in which the question blank was filled out, the company sent the victim a letter in which it stated that it could cure him permanently by its treatment in from ten to twenty days at a cost of $25. If the money was not forthcoming, a series of follow-up letters was sent to the patient, in which it was represented that within twenty days' time from the commencement of treatment, the cancer would be cured absolutely, never to return; that "every fiber, filament and tendril" would be rooted out and that the place where the cancer was would be healed over with healthy skin and all signs and danger of cancer would have disappeared forever.

At its hearing the company submitted samples of the "remedies" by which these marvelous results were purported to be brought about. They were analyzed in the Department of Agriculture and the findings of the department, which were transmitted to the postmaster general, were in part as follows:

THE GOVERNMENT'S LABORATORY REPORT

"The value of the above remedies in the treatment of cancer is summarized as follows:

"Nos. 7, 8, 9, 10 and 18 are simply antiseptic substances useful only in rendering surfaces to which they are applied cleanly and free from outside infection.

"Nos. 19, 21, 24 and 20, 22 and 23 are all also antiseptic and the latter three, in addition, contain opium, which to some extent allays pain of the part to which applied in these cases, the rectal or vaginal passages.

"Nos. 25 and 26 are simply tonic medicines.

"No. 17 is a preparation of opium which deadens the system to the sensibility of pain.

"No. 16, a cocain preparation which relieves pain temporarily by its local paralyzant action on the tissues to which it is applied.

"No. 15, an astringent which may be used in stopping the flow of blood or secretions.

"No. 14, a laxative pill of value in relieving constipation, which is quite likely to be produced by the administration of the opium included in the list of medicines.

"Nos. 12 and 13, merely coverings for holding medicines in place, inactive medicinally.

"Nos. 6 and 10 are simple ointments.

"No. 7, hydrogen peroxid; a cleansing agent.

"No. 5. This preparation was originally thought to be a mild caustic, but has since been found and is now believed to be a non-irritant iodin preparation and cannot be used to destroy any kind of tissue.

"No. 2. Crystallized carbolic acid is a dangerous and pernicious substance in the hands of the layman. It is a corrosive poison and while decidedly a tissue destroyer it acts destructibly both on diseased and healthy tissue and, moreover, is liable to produce gangrene when applied to ulcerated sufaces.

"No. 3. Chromic acid in concentrated solution is well-known as a caustic and is used to some extent as such, but in the weak solution represented it is very doubtful if this result can be accomplished.

"No. 4. Concentrated acetic acid in the strength here represented is a strong escharotic and does destroy tissue, both diseased and healthy, and much care must be exercised in its use.

"No. 1. From the representations made at the hearing it appears that the company depends very largely for results on the preparations known as 'Red Ointment.'

"The analysis suggested that but little caustic effect could be expected and experiments were instituted with a view of confirming or refuting the claims made. The remedy was applied both moist and dry to normal tissues, with the result that after twenty-four hours' application little, if any caustic effect was noticeable. These experiments, therefore, show that this preparation, for which such remarkable claims were made, possesses but little virtue as an agent for the destruction of cancerous growth or tissue.

"In conclusion, this office is of the opinion that the nature of these remedies is such that they can not possibly effect a cure except by the merest chance. They are absolutely worthless for internal cancer. The claims, representations and promises employed in promoting this treatment are false and deceptive."

The Department of Agriculture also made an investigation of its own, and the chief inspector of the Bureau of Chemistry made the following statement regarding the "treatment":

"This treatment is sold as a cure for cancer. The words 'Cancer Cure' in the name of the company itself implies an ability to cure what is generally recognized as an incurable disease. The labels, correspondence, testimonials and other advertising literature of the concern are saturated with the idea that the treatment above described will cure cancer. As a matter of fact there is no drug or combination of drugs known at the present time which can be relied on with any degree of certainty whatever to effect a cure for cancer. The therapeutic effects of the ingredients of the remedies comprising this treatment have long been known to the medical profession, but notwithstanding this fact the best authorities make no claim to the ability to cure cancer by means of drugs."

CONCLUSIONS OF THE GOVERNMENT

The Assistant Attorney-General, in summing up his opinion of the whole matter, says: "The weight of medical authority is to the effect that cancer is a disease, the existence and character of which can only be reliably ascertained by a careful personal examination, and that a positive diagnosis always requires a competent microscopic examination. The Dr. Curry Cancer Cure Company's pretense that they can properly diagnose cases of cancer and prescribe remedies for them without personal examination merely by this correspondence scheme, is without any scientific or proven foundation, and they must well know that it is mere pretense. What is undoubtedly the fact that out of the many cases submitted to them and diagnosed by them as cancer there are some which are not cancer

at all, but simply non-malignant sores which in some instances yield to treatment is what affords them a basis on the recovery of such cases to claim that they have cured cancer.

"According to the evidence submitted the medical profession knows of no drug or combination of drugs which can be relied on to cure cancer. That the Dr. Curry Cancer Cure Company has not succeeded where the profession has failed and that they are not honestly endeavoring to cure patients but that their pretensions to have discovered a cure for this disease are false and fraudulent and asserted merely to deceive and defraud suffering humanity, is revealed by the analysis of their medicines and the finding that they are merely ordinary antiseptics, narcotics and caustics.

"I find that this is a scheme for obtaining money through the mails by false and fraudulent pretenses, representations and promises, in violation of Sections 3929 and 4041 of the Revised Statutes, as amended, and recommend that a fraud order be issued against the Dr. Curry Cancer Cure Company and E. W. Ramsey, at Lebanon, Ohio."

The fraud order was issued.

Curious Pharmacologic Action of May-Pop (Passiflora Incarnata)

In perusing the "literature" of some of the fearfully and wonderfully made proprietary mixtures on the market one is uncertain whether the attitude of their manufacturers is "We aim to please" or one of "Heads we win, tails you lose." The uncanny elasticity of pharmacologic action in proprietaries of the type referred to is the cause of this uncertainty. For instance we find that both amenorrhea and menorrhagia are amenable to the same remedy and it is nothing unusual for a nostrum to be both a stimulant and a sedative.

We are reminded of this fact in perusing the "literature" of Daniel's Concentrated Tincture of Passiflora Incarnata, a proprietary marketed by J. B. Daniel, Atlanta, Ga. According to the booklet this remedy is to be employed in both convulsions and paralysis. Unlike many nostrums the proprietor claims to base his recommendations on exact pharmacologic investigations of which he produces two brands; the doubting physician pays his money and takes his choice. If he has a case of convulsion let him consult the laboratory report of Dr. Isaac Ott, who tells us that "in Passiflora Incarnata we have a drug of considerable power producing a depressant action on the reflex activity of the spinal cord." If, on the other hand, the physician has a case of paralysis to deal with he should turn over the page and take the authority of the certificate of the "Iamatological Bureau" which states, "it notably exalts the reflex function of the spinal cord."

Let the doctor in search of a hypnotic that is not a hypnotic and a powerful remedy that "does not endanger the heart" take his choice between these two contradictory actions. It is all the same to the nostrum maker so long as the doctor uses his "only reliable preparation of May-Pop" for all cases, every time and all the time.

But, seriously, isn't it about time that such opera bouffe methods of presenting medicinal agents to physicians should be resented by the medical profession? Disease itself is a serious thing and the treatment of disease is no trifling matter. The attempt to induce physicians to use a preparation by investing it with incongruously contradictory virtues neither flatters the intelligence of the medical profession nor invests pharmacy with any degree of dignity.

Correspondence

Notes on a Trip to South Africa

To the Editor:—Not the least of the many discussions relating to a better and more highly developed physique in man, has been one which has universally created a feeling of horror—I allude to the prevention of the continuation of life in a child deformed mentally or physically after its birth. It is not uncommon knowledge that the perfect development of the Zulus of Natal, and their superior mental capacity have far overtopped that of other native tribes of South Africa. Years before the advent of the white man in Natal it was a tribal dictate that infants with deformity or malformation of head or body should be destroyed immediately after birth. Students of heredity and of men will see the reason for the physical and mental development of the Zulu. A child born of healthy parents, with a perfect physical development, cannot but gain the mastery over the child born in tribes which do not observe any of the laws of the Zulus. With a healthy body and an equally healthy mind, it is natural that the Zulu should have sought healthy surroundings and follow Hygeia as he has done. Compare the Zulus of sixty and more years ago with those of to-day since the laws of Great Britain have suppressed the laws of the Zulus themselves. From a sober, moral and industrious race, they are hardly superior to-day to the other tribes. Their spirit of independence and consciousness of superiority is rapidly waning.

The question I have referred to I have not mentioned with a view to discussion, but simply because its significance struck me forcibly on a recent visit to South Africa. As native or tribal laws differ, so also do their customs. The contrast between Zulu and Bushman is indeed great, and contrary to the ill opinion we hold of the virtues of the Bushman, we cannot but wonder at the original meaning of the so-called Hottentot apron, really occurring in the Bushman and not in the Hottentots. The Hottentot, in civilization, is midway between a Kaffir and a Bushman. In a remarkable collection in the Cape Town Museum of life-size casts of several tribes of South Africa, there is a beautiful specimen of a Bushman woman in which the apron appears to the length of 2 inches or slightly more. The apron is the elongation of the labia minora. Just what means were employed to elongate it, so as to form a protection against any forcible entrance to the vagina, is not agreed on by authorities. Very little about it is known to-day, but it has been suggested to me by Mr. Lightfoot of the Cape Town Museum that weights of some kind were constantly worn in the younger years of Bushman maidens, instead of the stretching by pulling on the labia during the life of the woman.

Medical men who are leaning toward "healing by suggestion" may be interested in knowing that the art was practised in South Africa among the natives long before Bartholomew Diaz and Vasco da Gama discovered Southern Africa. Some years ago I had the opportunity of witnessing a native "doctor" endeavoring, apparently much against the will and consciousness of the patient, to suggest or persuade him that the ill and pain present were really misconceived and outside the body, and that he was well. The constant repetition by the "doctor" of the argument must through its monotony of sound put the patient to sleep and perhaps temporarily improve him.

Among the thousands of Kaffirs employed in the mines, the prevalence of syphilis is surprising. An institution of the government, similar to a quarantine smallpox station, was established to deal, apparently, with nothing else than syphilis. Not so very many years ago, syphilis was practically unknown among the natives of South Africa. Miners' phthisis is also increasing, and among the white miners it can almost be called a common disease. By far the majority of the inmates of that remarkable asylum for leprosy, near Pretoria, and also of that at Robbens Island, Cape Colony, are Kaffirs. Insanity is likewise common among the Kaffirs, especially those who are near large cities.

Ills which assail the Kaffir mentally and physically are numerous, and the old question of the moral and ethical value of civilization is again brought to mind.

A not uncommon curiosity among the natives is an affection in which the skin has a piebald appearance. The areas in which no pigment occurs change, so that the native presents a skin that is constantly adding or losing its pigment.

Blackwater fever, miners' anemia (ankylostomiasis), dysentery, malaria, smallpox and inflammatory affections of the eyes due to the pollen of blackthorn trees during the spring, are among some of the diseases which have a medical interest.

In conclusion, let me attempt to interest medical men in South Africa. Instead of hunting expeditions, have scientific expeditions for the study of these numerous tropical diseases

which are rare in other parts of the world. South Africa contains more material than can be found anywhere else, and which will prove of undoubted value to the profession here.

JAMES A. HONEY, M.D., Cambridge, Mass.

Method of Increasing the Efficiency and Life of the Dry-Cell Battery

To the Editor:—Some years ago I began to seek for some method of increasing the life and efficiency of dry cells. I at first employed the usual methods (potassium permanganate and sal ammoniac solutions, etc.). These proving unsatisfactory, I at last hit on the following simple but cheap and satisfactory method:

When my dry battery has become exhausted, I take an ordinary ⅜-inch drill-bit of sufficient length and drill a hole as near as possible to the carbon and between the carbon and the outside zinc covering. This hole should reach to within 1 inch of the bottom of the cell, beginning, of course, at the top or sealed part of the battery. I shake out of the cell all loose dust and particles, and place in this hole a 1½-ounce glass funnel, having a stem not less than 1½ inches in length, and of sufficient thickness to fit snugly, especially at the upper part of hole already prepared. This will prevent regurgitation of liquids to outside top of cell. Having secured the funnel firmly in the cell, I pour into it until three-fourths full (about an ounce) of chemically pure hydrochloric acid. This will start an immediate reaction and hydrogen and air bubbles containing particles of contents of the cell will regurgitate through the funnel and contents. It will require from eight to twenty-four hours for this reaction to be completed and the hydrochloric acid absorbed. Owing to a tendency for the small funnel to become clogged, it is necessary from time to time to pass a slender wire down through the funnel neck and hole in the cell. After absorption of the acid, I pour water in the funnel just as long as the cell will take it. When the cell has become thoroughly saturated inside, I seal it carefully with ordinary sealing-wax, set aside for twenty-four to forty-eight hours or longer, and test the cell for battery power. If the work has been carefully done, the results will not be disappointing.

I have in use in my office a battery of dry cells whose first efficiency was a life of three months, after which I treated them as above, and they have been in more or less constant use for a little over ten months. At present there is no sign of weakening or deterioration, and their regenerating ability is remarkable. How long they will last I am not prepared to say. They have exceeded my most ardent expectations. I have ceased discarding my old dry cells, and consider them more valuable after a renewal of this kind than when fresh from the hands of the manufacturer.

EDWARD M. HANSON, Keokuk, Iowa.

A Convenient Source of Carbon Dioxid Snow

To the Editor:—The treatment of certain dermatoses by carbon dioxid snow—a substitute originally suggested by Dr. Pusey for the less easily obtainable and less easily managed "liquid air"—has now an established place in the armamentarium of the dermatologist. Its common source is from the large cylinder of carbon dioxid furnished to soda-water fountains. This cylinder, although probably the cheapest source, is large, bulky, cumbersome and unsightly for office use, besides being somewhat clumsy for handling. I have recently found a convenient substitute for this; it is the small cylinder containing liquefied carbon dioxid sold for the inflation of a single automobile tire. It contains sufficient liquefied gas for a large tire—a sufficient quantity, as I have found, to produce enough "snow" for one average dermatologic application. This cylinder is about one inch in diameter and twelve inches in length; it costs $1, and when empty is returnable, being credited to the amount of 20 cents toward a new tube. Its manipulation, for either tire inflation or "snow"-making, requires a handle with valve and small hose attachment, which costs $2; this can, of course, be used indefinitely.

HENRY W. STELWAGON, Philadelphia.

An Envelope Powder Shaker

To the Editor:—Many physicians and surgeons find it difficult to apply antiseptic powders to wounds properly. A powder blower that will apply the powder evenly, lightly and not wastefully, over the edges of wounds has not yet been offered to the public. Some surgeons use a pledget of cotton with dressing forceps, but this is unsatisfactory as it requires that the powder be poured out on a paper. I have used an envelope for a number of years with much satisfaction and a great saving of powder. It is used as follows: Place 15 or 20 grains of any powder, the finer the better, in an ordinary druggists' prescription envelope, which should then be sealed tightly and the tip of one of the corners torn off. Now take up the envelope between the thumb and fingers, gently press the sides so as to make a little air space and tap on the center of it with the tip of the index finger. This operation will blow out a very fine cloud of the powder and by holding it close to the wound it will take but a few taps with the finger to cover the wound with the finest coating possible. When a corner has been thus used it may, by using the handle of a knife, be turned down tight, and the next time another corner may be torn off, as the crimped corner interferes with the ejection of the powder. I have dressed many large wounds several times without using more than 15 grains of powder and one envelope.

S. A. NEWMAN, M.D., Cassville, Mo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HISTORY OF SEROTHERAPY

To the Editor:—I desire to obtain a history of serotherapy. Can you direct me to such a publication?

W. S. DEVINE, Marshalltown, Iowa.

ANSWER.—Dr. Ludvig Hopf's "Immunität und Immunisirung: Eine medicinisch-historische Studie," 95 pages, Tübingen, Franz Pietzcker, 1902, gives an excellent historical account of the theories of infection and immunity, including the development of serotherapy up to that date. The more recent developments are scattered through the literature. Wright's "Studies on Immunization," Constable, London, includes the main papers published by Wright on the opsonins, and contains about 500 pages. Sauerbeck's "Neue Tatsachen und Theorien in der Immunitätsforschung," published in 1907 in the Lubarsch-Ostertag Ergebnisse, and also as a separate monograph, by J. F. Bergmann, Wiesbaden, gives a thorough review particularly of the opsonins and aggressins (over 300 pages).

INJECTION TREATMENT FOR HEMORRHOIDS

To the Editor:—Kindly give list of works on the injection treatment for hemorrhoids.

L. A. W.

ANSWER.—We know of no special book on the injection treatment of hemorrhoids, but it is described in the standard works on rectal diseases, among which may be mentioned:

Agnew: Rectal Diseases, L. S. Matthews & Co., 2623 Olive St., St. Louis, Mo.

Allingham: Diseases of the Rectum, William Wood & Co., 51 Fifth Ave., New York.

Andrews: Rectal and Anal Surgery, Chicago Medical Book Co., Honoré and Congress Sts., Chicago, Ill.

Ball: Diseases of Rectum and Anus, W. T. Keener & Co., 90 Wabash Ave., Chicago, Ill. (This firm has gone out of business.)

Gant: Diseases of the Rectum and Anus, E. A. Davis Co., 1914 Cherry St., Philadelphia, Pa.

Goodsall and Miles: Diseases of the Anus and Rectum, Longmans, Greene & Co., 91-93 Fifth Ave., New York.

Kelsey: Surgery of the Rectum, William Wood & Co., 51 Fifth Ave., New York.

Mason: Office Treatment of Rectal Diseases, L. S. Matthews & Co., 2623 Olive St., St. Louis, Mo.

Mathews: Diseases of the Rectum, Etc., D. Appleton & Co., 436 Fifth Ave., New York.

Tuttle: Diseases of the Rectum, D. Appleton & Co., 436 Fifth Ave., New York.

Wallis: Surgery of Rectum, William Wood & Co., 51 Fifth Ave., New York.

These books can be obtained through medical booksellers generally.

Miscellany

SIMPLE REFRACTION FOR FAMILY PHYSICIANS

Its Promotion During 1908-09*

LEARTUS CONNOR, A.B., M.D.
DETROIT, MICH.

At its 1908 meeting the Michigan State Medical Society publicly initiated a movement "to qualify family physicians for the refractive work now in the hands of opticians." This paper aims to sketch briefly our progress.

By some oversight our medical colleges have rarely taught their students practical refraction, while they inoculated them with the idea that good refractive work was possible only to a specialist. Meantime, the science and art of refraction reached a high standard of perfection in the hands of specialists, working outside the colleges. Naturally, this standard was impossible to the average student or family physician, and a course adapted to their needs has not found its way into college curriculums. The course must be such that the student can master it without interfering with his other courses, and the family doctor practice it while caring for the other disorders of his patients. It will certainly include simple refraction, as then, by the aid of the specialist, in complicated cases, the refractive needs of all the people will be fully met.

Opticians began the practice of refraction, because ophthalmologists were too widely scattered and too high-priced; the family doctors were ignorant of simple refractive work and afraid to attempt its mastery. By organization and business push opticians so impressed the people to whom they prescribed and sold spectacles that sixteeen state legislatures have granted them special rights, stolen from the medical acts, to practice that ophthalmology which family physicians should be practicing. They showed the legislatures that our system of medical education failed to provide physicians able to determine the refraction of the people's eyes. Our movement aims to promote such training of the family physician that he with the ophthalmologist will be adequate to care for the refractive needs of the people, and so to obviate the present necessity for optometrists.

The great obstacle to this movement is the wide-spread conviction that family physicians cannot master, much less practice, simple refraction. Yet it is in evidence that laymen have learned and do successfully practice this part of medicine; surely the physician's training should enable him to outstrip the layman in this competitive race, and it would if he made equal effort. Further, the evidence is overwhelming that family physicians have mastered simple refraction and are now successfully practicing it in connection with their other work. In my possession are many letters establishing this fact. Time admits the reading of but two, and these only in abstract.

The first letter is from Dr. Gerald Edmunds of Honor, Mich., and is dated May 2, 1909. He says:

"I think it may interest you to know that for some time I have tried to fit myself for 'general practice.' I graduated from the Chicago College of Physicians and Surgeons in 1892, and practiced in Chicago about eight years, when I located in this thriving little town. I used to have dreams of special practice as an 'unlimited practitioner,' but when I located in a small place, I found my time so occupied that it was all I could do to make a better practitioner of myself. After reading your article on the 'neglected patches' in the field of medical practice, I came to the conclusion that I had long neglected to fill the wants of my families, because I was not equipped to correct common defects of vision; besides, my son was troubled with a simple refractive error which I was incompetent to correct. So I bought Theobald on the Eye and Parker on Refraction (I already had Noyes), and spent my spare time in studying. I then bought from the Johnson Optical Company a small trial case and some fitting frames and went to work. I fitted my first patient the latter part of November, 1908, and since have determined the refraction in about thirty-five moderately simple cases, without any effort to push this as a specialty—simply having the paraphernalia for refraction about the office brought this work. I had formerly referred such cases to persons at a distance, much to the inconvenience of my patients. After this experience I am satisfied that any physician, with a reasonable amount of push, can add to his income, in a legitimate way, quite a few dollars during the year and benefit the public a great deal.

"I think that most physicians dislike the idea of being general practitioners, and feel that unless they at least claim a specialty the public will not think they amount to much. I am proud of being a general practitioner, and think that there is a great field for 'specializing' along the line of 'general practice.' The profession of medicine is too vast to be grasped in all branches, in all details, by one mind."

The second letter is from Dr. W. C. Garvin, of Millington, Mich., dated June 20, 1909. He says:

"I am enclosing herewith the program of the last meeting of the Tuscola County Medical Society, at which Dr. Hays told his personal experience in refraction, and the paper was very generally discussed. There are six physicians in Tuscola county now doing something along this line, and I think that the traveling optometrists will find poor picking in this section in the future.

Since Oct. 17, 1908, I have fitted eighteen people with glasses, and think that they have all been satisfied, even if I have not done every case to my own satisfaction. I learn something from each case in which I determine the refraction, and unless I can improve the vision do not order glasses. Thus far I have found no case in which I thought glasses were really needed, that I have been unable to relieve, but should I find such a case I will refer it to the nearest specialist."

The family physician refractive work reported in these letters and much more told in letters which time forbids reading, was stimulated by the unanimous passage by this society last year of the following preamble and resolutions offered by Leartus Connor and seconded by F. W. Robbins:

"WHEREAS, Michigan now has three classes of medical practitioners: viz.: (1) The family physician, (2) specialist, (3) and remnants, as opticians, osteopaths, Christian scientists, etc. (all persons devoid of adequate training for the duties of the physician);

"WHEREAS, Among those remnants are the optometrists, who live on the cases of refractive defects neglected by the family doctor, and without the specialists' field;

"WHEREAS, It is discreditable to the medical profession and harmful to the people that any part of medical practice fall into the hands of unqualified persons;

"WHEREAS, It being a physical impossibility for the fully trained ophthalmologist to care for all the neglected class, it remains for the family doctor to qualify himself to recognize and treat the simple cases, seeking expert aid as emergency demands, if the medical profession is to occupy its entire field. Therefore, be it

"*Resolved*, That the councilors of the Michigan State Medical Society be directed to take this matter up with their several county societies and so educate their constituents that between the family physician and ophthalmologist the needs of the people be fairly and fully met.

"*Resolved*, That the council request the Michigan State Board of Registration, (1) to place among its requirements for a license to practice medicine, a practical demonstration by the applicant of his ability to recognize and treat simple presbyopia, simple myopia and simple hyperopia; to recognize and treat the infectious diseases of the eye and the uveal tract; and (2) that it cooperate with our legislative and public policy committee in all practical efforts to prevent the enactment by the Michigan legislature of a law giving opticians the legal right to practice ophthalmology in Michigan."

These resolutions were the outcome of a comprehensive study of the entire subject during the preparation of a paper on "Ophthalmology for General Practitioners" read before the American Academy of Ophthalmology and Oto-Laryngology and published in THE JOURNAL (Nov. 28, 1908, li, 1833). The facts of the paper were granted by the academy, the action advised approved, but regarded as impracticable. It was hoped that the resolutions would awaken the profession to study the situation, and induce some to qualify themselves to practice simple refraction; our letters show that these hopes were in some degree realized.

Further, the subject was taken up with individual members of the Michigan State Board of Registration and on Feb. 12, 1909, the secretary, Dr. B. D. Harison, sent the following letter to medical colleges:

'I am directed by the chairman of the examination committee, who has full charge of the matter, under resolution of

* Read before the Michigan State Medical Society, September, 1909

the board, that in the future, beginning with the next spring examination, all applicants for license will be required to demonstrate their fitness to do practical refraction work, in addition to the usual written paper on diseases of the eye, ear, nose and throat. The examination on this subject will be conducted by a specialist and will constitute an integral part of the examination, and failure to obtain 50 per cent. of possible standing will subject the applicant to refusal of license."

It is reported that on receipt of this notice many colleges, for the first time, began to teach their students simple refraction. Efforts are being made to have other state registration boards follow Michigan's example, and it is confidently expected that in the near future all who enter the practice of medicine will be able to do simple refraction. This requirement is definite, fair to the applicant, helpful to the profession, and beneficial to the people.

Besides the paper already mentioned, others were read before the Wayne and Tuscola county medical societies and the American Academy of Medicine. I also published in THE JOURNAL (April 10, 1909, lii, 1195) a letter giving in some detail reasons why family doctors should be able to do simple refraction.

Dr. Alvin A. Hubbell, of Buffalo, N. Y., in his address as chairman of the Section on Ophthalmology of the American Medical Association, June, 1909, discussed the "Ophthalmic Qualifications Which Should Be Demanded of the General Practitioner and of the Specialist Respectively" (THE JOURNAL, June 26, 1909, 2089). The committee appointed by the section to report on this address recommended the following:

1. "Every general practitioner should have the training in ophthalmology which will enable him to manage infectious diseases of the eye and its refractive defects. To obtain this qualification, medical colleges should make such training obligatory and state boards of registration demand it as a condition for license.

2. "Every general practitioner who desires to become an ophthalmologist should add to his training a comprehensive study of ophthalmology; do experimental work in the laboratory; and personal clinical experience in hospital or private office. To insure these qualifications, there should be appointed on each state board of registration at least one ophthalmologist, to examine applicants for license to practice ophthalmology.

3. "If these recommendations be approved by the Section, it is urged that a committee of three be appointed by the chair to study the subject and report their findings of the detailed measures necessary to secure trained family physicians, adequate for the needs of all the people, when suffering from ocular disabilities."

These recommendations were unanimously adopted by the Section, and the following committee appointed, viz.: Leartus Connor, Detroit; James Thorington, Philadelphia; and Albert R. Baker, Cleveland. It will be noted that future ophthalmologists will be asked to have the diploma required of the general practitioner, supplemented by a comprehensive study of ophthalmology, including experimental laboratory work and clinical experience in hospital or private office, all to be satisfactorily demonstrated to the satisfaction of the ophthalmological member of the state board of registration. As this Section numbers over eleven hundred members, the significance of its endorsement of these resolutions is apparent.

From evidence thus presented the proposition that "the family physician ought to be able to do simple refraction" has been endorsed by the Michigan State Medical Society; the American Academy of Ophthalmology and Oto-Laryngology; the American Academy of Medicine; the Section on Ophthalmology of the American Medical Association, and is required by the Michigan State Board of Registration as a condition for license to practice medicine.

By private letters, over signatures of their writers, it is shown that some family doctors have learned and are successfully practicing the art of simple refraction. It would be an insult to the other physicians in Michigan to suppose them inferior in this respect. Doubtless most are surfeited with practice and do not care to make the attempt, but if they tried they would surely succeed. Possibly the new men who enter the field will make the older ones take notice, as their patients leave them for the new doctor who can manage simple refraction.

At its meeting, June 14, 1909, the Tuscola County Medical Society listened to a paper by one of its members, a general practitioner, on "Some Points on Refraction," which was generally discussed by his fellow members, many of whom are earnest students of the subject. Similar incidents will occur in other counties, as a considerable number of their members master "simple refraction." Naturally this will lead to the mastery and discussion of other topics in general practice ophthalmology. This new line of society activity will augment the interest in and power of county societies, and so of the state society. As has occurred in Tuscola county, the opticians will lose their ophthalmic practice in the same proportion that family physicians become qualified therefor.

It is much that the largest ophthalmological society in America, the Section on Ophthalmology of the American Medical Association, has endorsed this movement and appointed a committee to encourage state registration boards to require a working knowledge of simple refraction as a condition for granting a license to practice medicine; and medical colleges to introduce it into their curriculums. So far as I am aware, this is the first special society to encourage the family doctor to advance his interests and that of his families by cultivating a neglected field allied to his own.

It counts for much that the Michigan State Board of Registration, in behalf of the people, demands a working knowledge of simple refraction as a condition for granting a license; because medical colleges must prepare their graduates therefor.

With results thus briefly sketched, gained during a single year, surely our council will be encouraged to more active effort in stimulating the members of their county societies (not surfeited with business) to master the technic of simple refraction.

All friends of the movement will be incited to greater activity and larger faith in its early triumph.

91 Lafayette Boulevard.

Symposium on Childhood Pathology

The pathology of childhood is discussed by various authors in the *Proceedings of the Pathological Society of Philadelphia*, September, 1909, xii, 3.

Antenatal Pathology.—B. C. Hirst deals with three problems in this subject, viz., antenatal syphilis, mechanically caused deformities, and the effects of maternal impressions. To prevent the fetus inheriting syphilis from a parent a period of four years under treatment should be insisted on. In a large proportion of cases syphilis acquired during pregnancy is transmitted to the fetus. The diagnosis of fetal or infantile syphilis can often be made without asking embarrassing questions by the discovery of the *Spirochæta pallida*, by Wagner's sign, by enlargement of the liver and spleen, by connective tissue overgrowth, skin eruptions, etc. Trauma or succussion in animals may lead to malformation of the fetus; and malformed or idiotic children may result from attempts to induce abortion. Violent emotion in the mother can affect the mentality of the child and can arrest its physical development or terminate its existence. But the photographic reproduction of some physical defect which the mother has seen is not to be expected, and such belief on the part of the laity should be combated by the physician.

Infections of the New-Born.—These are described by S. McC. Hamill. Mild infections of the umbilical stump are common. Omphalitis may extend along the arteries, usually starting with a periarteritis which spreads through the walls of the vessel, producing thrombi. The clots may break down and be converted into pus. The infection less frequently involves the veins and may extend to the peritoneum or liver, eventuating in sepsis of the new-born. Hamill regards melena as a symptom of septic infection. Septic infections in infancy may be due to streptococci, staphylococci, gonococcus, pneumococci, the colon bacillus, and many others. Contrary to the general supposition, Hamill believes that the new-born possess relatively high resisting power, or else infections would be more frequent, considering the numerous exposures to infecting agents. Infection may occur through the cord, the skin, the

alimentary or respiratory tract, etc. The occurrence of a suppurating lesion of the cord does not prove it to be the portal of entry, as this infection occurs frequently without generalization. Infection through the skin may arise through the bath-tub, so that the use of sterilizable bath-tubs becomes a matter of importance. The care of the mouth, nostrils and anus is especially important to ward off infection through these channels. The pathologic changes are, briefly, congestion, hemorrhage and parenchymatous degeneration. Hemorrhages are especially important and may occur in the brain, lungs, pericardium, pleura, mucous membrane, etc. The liver usually shows the most marked changes such as parenchymatous or fatty degeneration, hepatitis and multiple abscesses. The kidneys may be the seat of parenchymatous changes, fatty degeneration, hemorrhages and interstitial inflammation. The pelvis is sometimes involved.

Status Lymphaticus.—This is the subject of a communication by J. Howland. The normal size of the thymus is undetermined, and, although investigation indicates the presence of a condition known as status lymphaticus in which the thymus and the lymphoid tissues are greatly enlarged and in which sudden death from cardiac syncope is very liable to occur, none of the theories so far advanced is sufficient to account for death in these cases. Mechanical pressure may be a factor in a small proportion of cases, but the supposition of a toxic action from the thymus is negatived by Howland's experiments. The theory that the thymus enlarges from a compensatory effort to supply the place of other organs is attractive, but attempts to explain it by lymphoid exhaustion in the spleen or glands are not successful, for the thymus does not exhibit a lymphoid structure, but is rather an epithelial organ. Twenty years after the enunciation of Paltauf's views we find ourselves still without a satisfactory explanation for death in status lymphaticus, but discarding vague theories enables us to get a clearer perception of where we stand.

Tumor Growth in Childhood.—This, according to David Riesman, cannot be determined by exact statistics. Such as are available indicate it to be relatively infrequent. Connective tissue tumors are more common than epithelial. If the tumor is malignant it takes the form of sarcoma rather than carcinoma. Of benign tumors fibroma, lipoma, chondroma, osteoma and myoma are uncommon or rare, while angioma and neuroma are comparatively frequent. Angioma is nearly always congenital or develops during the first year. It has been attributed to trauma, either intrauterine or at birth. Neuroma has its favorite site in the region of the eye. It usually takes the form of the plexiform neuroma, which in look and feel suggests a collection of earthworms under the skin and has a slow but progressive growth. Sarcoma is by far the most common tumor of childhood, all varieties being represented and the sites in the main being the same as in adult life. Sarcoma of the brain, including gliosarcoma, is the most frequent of brain tumors. In the internal organs, aside from the brain, sarcoma is rare, but frequently congenital. Congenital sarcoma of the liver and of the suprarenal gland has been reported by Pepper, who has collected five cases, and has also reported eleven cases of primary sarcoma of the suprarenal gland. A prominent symptom of these tumors is hemorrhage. Tileston and Wolbach have described as a clinical entity a peculiar primary sarcoma of the suprarenal gland which is associated with sarcoma of the cranium. The symptom that usually first attracts attention is the exophthalmus.

Chloroma.—Riesman considers this as a variety of sarcoma. It is a greenish-colored tumor occurring in the temporal and parietal region of the skull, the hard palate, the sternum and ribs, rarely in the skin. It is almost confined to children under the age of 15 years and is vastly more frequent in the male than in the female sex, the proportion being 36 to 10. The course is acute (four to six months) and the most striking symptom is exophthalmus, as it is also in the condition described by Tileston and Wolbach. Histologically, two types of chloroma may be distinguished, one in which the cells are large and lymphocytic, similar to those found in acute lymphatic leukemia; and one in which the cells resemble the myelocytes. These features have led Dock, Warthin and others to the view that chloroma is really a form of leukemia and not a tumor in the strict sense. The nature of the green color from which the tumor takes its name has not been definitely determined, but it is supposed to be due to the compactness of the highly granular cells.

Mixed Tumor.—An important and common new growth in childhood is the so-called mixed tumor, which passes under many names in the literature, such as sarcoma, carcinoma, myxosarcoma, rhabdomyoma, adenosarcoma, etc. The principal seats are the kidney, the ovary and the testicle. The growth of the tumor is rapid in contradistinction to that of hypernephroma, which is slow. Metastasis is not common, occurring in about 30 per cent. of the cases, chiefly to the lungs and liver. A curious feature of the tumors is that they do not directly involve the substance of the organ in which they are found, but press it aside. This is particularly noteworthy in the kidney. The surface of the section may be soft or gelatinous; at times it shows lobulation. Necrosis and hemorrhagic softening are common. The histologic structure is complex; striped and smooth muscle tissue, cartilage, adipose, mucoid, and elastic tissue, as well as glandular elements are found. In a rare case, reported by Muus, epidermal elements in the form of pearly bodies were present. The complexity of the tumors has given rise to a number of opinions as to their origin. Without going deeply into the subject it may be stated that the most acceptable view is that they are derived from a misplaced blastomere.

Retarded Mental Development.—D. J. McCarthy contributes a special study of this subject. The nervous tissues may show gross pathologic lesions or a practically normal nervous system. While alcohol and syphilis figure in the heredity, the important influence appears to be condition of lowered nutrition mainly due to tuberculosis. An additional clinical factor is the effect of prolonged and difficult delivery. The probable influence of the adrenals, pituitary, thyroid, etc., on cerebral development has been shown by modern investigations. In later childhood McCarthy has in two cases noted the connection of a persistent and enlarged thymus with a hallucinatory, delusional condition, lasting over several days with reflex dysphagia. In adult life, a grave neuromuscular condition, myasthenia gravis, is associated with and probably caused by the pathologic changes secondary to a persistent thymus. Instances have been noted in which the ganglion cells, in consequence of the presence of hemosiderin, underwent a change of function by which they became eliminators of the foreign substance and ultimately degenerated and became calcified. Such changes of function may be induced by congestion and edema, which may produce microscopic hemorrhages. In the minor grades of osmotic hemorrhage, due to prolonged passive congestion, perversion of function of the ganglion cell results without gross lesions. McCarthy believes that free blood in the tissues leads to that interference of function and potential which is manifested in later childhood in the failure to advance in mental development beyond a certain stage. Both experimental and clinical evidence show that microscopic blood osmosis with iron infiltration may exist both in the prenatal and postnatal states. That either inherited or acquired weakness or pathologic lesions of the vascular system would necessarily play an important part in the production of the above conditions is evident. The influence of tuberculosis and other dyscrasic states, syphilis, etc., could easily act in this way by leading to obstruction or rupture of capillaries or veins from increased pressure. This cause may not be the only one, but as an important factor in a large group of cases it deserves careful investigation.

Pasteurized Milk in Infant Feeding.—Physicians who have had large experience in the care and feeding of infants have a prejudice against the use of heated milk for prolonged periods. While it is admitted that the use of heated milk greatly diminishes the amount and seriousness of infantile diarrheas, it has been noted that while the children at first do well, later they may become flabby and anemic and the subjects of scurvy. Whether it is the heating or some other factor in the milk that induces scurvy is not determined.—M. J. Rosenau, in *Annals of Medical Practice.*

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of September, 1909:

ALABAMA

Pettey, F. P., New Decatur.
Winters, J. S., Bessemer.

ARKANSAS

Wall, E. D., Park Place.

CALIFORNIA

Bell, H. D., Oakland.
Blair, J. C., San Jose
Dozier, Earnest, San Francisco.

COLORADO

Horn, W. L., Boulder.

CONNECTICUT

Bill, P. W., Bridgeport.

DISTRICT OF COLUMBIA

Lowe, T. F., Washington.

GEORGIA

Corson, E. R., Savannah.
Gilbert, W. L., Atlanta.
Harrold, C. C., Macon.
Longino, L. P., Milledgeville.
McAfee, J. C., Macon.
Murphey, C. E., Atlanta.
Palmer, S. B., Macon.
Person, W. E., Atlanta.
Sterling, A. W., Atlanta.

ILLINOIS

Allison, C. N., Canton.
Bachmann, A. S., Forest Park.
Baker, G. J., Herrin.
Black, G. C., Table Grove.
Brinckerhoff, C. E., Chicago.
Drake, W. D., Aviston.
Drozdowitz, Theo., Chicago.
Escher, F. H., Chicago.
Grant, Margaret, Waukegan.
Haan, G. W., Aurora.
Pratt, J. A., Aurora.
Walters, William A., Chicago.
Warren, Emma J., Chicago.
Wright, A. O., Waukegan.

INDIANA

Dash, G. E., New Albany.
Ketcham, J. M., Indianapolis.
M Coy, J. N., Vincennes.
Paff, G. E., Rome City.

IOWA

Askey, T. B., Waterloo.
Carlson, F. G., Thornton.
Corcoran, L. L., Rock Rapids.
French, P. P., Rudd.
Hutchison, C. W., Whittemore.
Maynard, J. H., Adair.
Rose, H., Ft. Dodge.
Schmidt, F. E., Muscatine.
Sturdivant, L. J., Exline.
Walker, W. G., Corydon.

KENTUCKY

Haynes, W. L., Calhoun.
Johnson, G. L., Harrodsburg.
Lovell, A. G., Mt. Vernon.

LOUISIANA

DeLaureal, G. R., Broussard.
Lassiter, W., New Orleans.
Lynch, R. C., New Orleans.
Weil, A. I., New Orleans.

MAINE

Moore, R. B., Portland.

MASSACHUSETTS

Bryant, M. D., Lowell.
Miles, C. G., Brockton.
Pond, L. B., Easthampton.
Prenn, Joseph, Boston.

MICHIGAN

Blackman, J. M., Quincy.
Ball, J. H., Bay City.
Holdsworth, Frank, Traverse City.
Lambert, W. C., Wyandotte.
Russell, C. V., Lansing.
Wilson, Harold, Detroit.

MINNESOTA

Stocking, F. F., Rushford.

MISSISSIPPI

Carr, H. R., Water Valley.
Crawford, B. L., Tylertown.

MISSOURI

Bryan, R. S., St. Louis.
Carley, Harry D., St. Louis.
Clendening, Logan, Kansas City.
Hogan, F. E., Bigelow.
Smith, S. D., Cowgill.
Steiner, A. S., St. Louis.

NEBRASKA

Little, T. C., Omaha.
Marvel, G. H., Aurora.
Taylor, H. A., University Place.

NEW YORK

Bruso, C. F., Buffalo.
Caccini, A. M., New York City.
Clinton, Marshall, Buffalo.
Collie, R. M., Schenectady.
Dare, G. D., Morrisonville.
Foster, E. C., Penn Yan.
Halliwell, H. G., Ilion.
Jenkins, T. W., Albany.
Landesman, Max, New York City.
Maddock, G. F., Brooklyn.
Marshall, S. A., Long Island City.
Nehrbas, Jacob, Brooklyn.
Piatt, A. A., Wayland.
Wallace, H. M., Oswego.
Wooton, H. W., New York City.

NORTH CAROLINA

Bowling, E. H., Durham.
Harper, C. T., Wilmington.
Lattimore, E. B., Shelby.
Palmer, B. H., Shelby.
Young, J. W., Charlotte

OHIO

Dickenson, John, Cleveland.
Klaus, M. H., Cleveland.
Patton, J. E., Byesville.
Schuster, G. R., Dayton.
Stanley, E. I., Albany.
Woodard, E. B., Chicago Junction.

OKLAHOMA

Chapman, J. J., Pooleville.
Cook, W. H., Chickasha.
Martin, J. T., Oklahoma City.

PENNSYLVANIA

Bates, H. L., Chestnut Hill.
Bertolet, W. M., Reading.
Bushong, Frederic, Pottstown.
Drake, G. R., Plymouth.
Dunlop, F. C., Philadelphia.
Eber, S. I., Pittsburg.
Finkelpearl, Henry, Pittsburg.
Eridy, C. W., Philadelphia.
Hunsicker, C. H., Philadelphia.
Lowa, Walter, Philadelphia.
Mauger, E. B., Pottstown.
O'Drain, T. I., Philadelphia.
Pretz, G. R., Lebanon.

SOUTH CAROLINA

China, Archie, Sumter.
Moorer, M. P., Georgetown.
Wiedhagen, A. C., Charleston.
Workman, J. B., Ware Shoals.

TENNESSEE

Williams, G. V., Chattanooga.

TEXAS

Freels, A. M., Denison.

UTAH

Gemmell, B. A., Salt Lake City.
Sharp, J. F., Salt Lake City.

VERMONT

Butterfield, A. M., North Troy.
Hyatt, E. A., St. Albany.

VIRGINIA

Epperson, P. S., Stovall.
Gorman, E. A., Alexandria.
Lewis, J. M., Manasses.
Harrison, H. W., Roanoke.
Mahood, H. B., No. Emporia.
Patterson, Wm., Waynesboro.

WASHINGTON

Morse, R. C., McMurray.
Peacock, A. H., Seattle.
Redner, L. R., Dayton.
Twiss, H. I., Seattle.

WEST VIRGINIA

Gardner, M. E., Dunlevie.
Manning, G. W., Dobbin.

WISCONSIN

Hastings, J. F., Kenosha.
Helland, G. M., Albany.
Rath, R. R., Granton.

PHILIPPINE ISLANDS

Welcome, E. H., Paniqui.
Jesus, Vicente, Lucena.

Book Notices

AMERICAN ILLUSTRATED MEDICAL DICTIONARY. By W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania Hospital. Edition 5. Flexible Leather. Pp. 876, with 2000 new terms. Price, $4.50 net. Philadelphia: W. B. Saunders Co., 1909.

The fifth edition of this useful dictionary contains thirty-eight pages more than its predecessor did. According to the preface to the fifth edition, "more than 2,000 new terms have been added. The majority of these words appear for the first time in any dictionary. Moreover, the entire book has been revised, and many of the definitions have been rewritten and improved. A special feature has been made of those words in the realm of biology which occur so frequently in the literature of physiology and pathology." These improvements are indeed commendable; but we must confess that no medical dictionary appears as yet to give adequate attention to this rapidly growing division of the medical vocabulary. We should have been glad, for instance, to have had the names given of the various species of mosquitoes which act as hosts to pathogenic germs. Moreover, we feel that the medical lexicographer who shall attempt to cover thoroughly the field of those apparently indispensable plagues of medical literature, eponymic terms, old and new, especially in pathology, anatomy and biology, will earn the gratitude of all users of medical dictionaries.

We regret that neither editor nor publisher has thought it worth while to make this dictionary a guide to capitalization. We hope they may see fit to remedy this defect in the next edition.

THE MALARIAL FEVERS, HEMOGLOBINURIC FEVER AND THE BLOOD PROTOZOA OF MAN. By Charles F. Craig, M.D., Captain, Medical Corps, U. S. Army. Cloth. Pp. 477, with illustrations. Price, $4.50. New York: William Wood & Co., 1909.

In this work Craig endeavors to present the important advances and facts of interest to the student and clinician in regard to the malarial fevers and related subjects. Craig has had a large personal experience in the United States military hospitals in this country, Cuba and the Philippines. He is well-known because of the importance of his investigations in malaria and other protozoan diseases, which, taken in conjunction with his exceptionally large and varied active clinical experience, renders him especially well-qualified to write a book of this kind.

The 360 pages devoted to the consideration of the malarial fevers is divided into five parts: (1) the etiology, (2) the general and special pathology, (3) the symptomatology and clinical varieties, (4) the sequelæ, complications and prognosis, and (5) the diagnosis, prophylaxis and treatment of the malarial fevers. There are three colored plates, drawn by the author himself, illustrating various stages in the development of the different kinds of malarial plasmodia, numerous photomicrographs and clinical charts. In addition to the thorough consideration of the malarial fevers from the clinical as well as the laboratory side, chapters have been added treating on hemoglobinuric fever and the blood protozoa of man. Like Manson, Sambon and others, Craig holds that hemoglobinuric fever is a separate disease caused by a hitherto undiscovered organism, and he advocates with much force and soundness that the disease should be studied so far as possible without bias by preconceived ideas as to its malarial nature. The fact that hemoglobinuric fever occurs in malarial regions and often complicates malarial disease, renders it necessary to include its consideration in a complete work on malaria.

The last four chapters are devoted to the Leishman-Donovan bodies, the cause of tropical splenomegaly; *Trypanosoma gambiense*, the cause of sleeping sickness; the spirochetes causing the relapsing fevers; and *Histoplasma capsulatum* of Darling. This part is illustrated by a plate, the omission of part of the lettering of which may be noted.

At the end of each chapter of the book is a list of the most important papers bearing on the particular subject discussed, with authors' and general index at the end. The book is clearly written; it bears abundant evidence of its author's first-hand knowledge and thorough scientific study of malaria; and it is believed that it will be accepted by English-speaking physicians as a standard treatise on the malarial

fevers. Craig has rendered a valuable service in placing within reach of physicians needing it—and this is true especially of those in tropical and subtropical countries—this excellent and complete guide to the diagnosis and treatment of malarial and other protozoan diseases. It is a worthy continuation in its sphere of the fine American work in the field of malaria and protozoon diseases in which Dr. Craig has taken a prominent part for several years; and it reflects credit on the Medical Corps of the U. S. Army.

A SYSTEM OF OPERATIVE SURGERY. By Various Authors. Edited by F. F. Burghard, M.S., F.R.C.S., Teacher of Operative Surgery in King's College, London. In Four Volumes. Vol. 1. Cloth. Pp. 751, with illustrations. Price, $10. New York: Oxford University Press, 1909.

The rapid advances in operative technic made within the last few years have demanded constant revision of operative surgeries which are already on the market, or the publication of new ones. The field has become so vast that it is practically impossible for one man to cover the entire field of operative surgery in all its details satisfactorily. The aim of this work, the first volume of which is under consideration, is to secure the best in each separate line by delegating the subject-matter to men who are recognized as leaders and original workers in the subject assigned to them. The result is noteworthy, as all the chapters are good and there is a symmetry about the entire volume which is usually wanting in a system of either surgery or medicine.

The chapter devoted to disinfection of the hands and patient's skin is good. The simple technic of water, soap, 70 per cent. alcohol, and a mercury preparation is preferred. The technic advised follows very closely that given by Fürbringer. We do not agree that the nails should be cut as short as possible, for a nail of moderate length certainly affords the greatest protection to the thin cuticle beneath, and sterilization is much more easily performed when this cuticle is intact than when it is fissured, as is apt to be the case when the nail is cut as short as possible. The writer in this chapter does not, we believe, insist strongly enough on the use of rubber gloves. The statement that they are undesirable for some operations because they interfere with the sense of touch and because they are so slippery will not be confirmed by many. If gloves are used often, one becomes accustomed to them and certainly the results following their use can not be equaled by any chemical method of hand sterilization, none of which will stand a thorough bacteriologic test.

Chapter 1 of Section 2, dealing with infiltration and regional anesthesia, and embodying most of the excellent and well-known work of Mr. Barker, can be read to advantage by every one using local anesthesia.

In Section 3, devoted to amputations, the indications and contraindications are stated clearly. We think, however, that the value of conservative operations on myeloid sarcomas might have received more attention than it has on page 64. The dangers of shock during amputation and methods of preventing the same are discussed on page 69 in a very satisfactory manner.

The subject matter in this volume is presented very clearly; many useless details emphasized in other text-books of operative surgery are slighted in this for the broad, general principles, so that each page is filled with essentials.

The first volume of this work should presage a large circulation for the entire system. The names appearing in the list of contributors speak for its scientific value and the succeeding volumes will be awaited with great interest.

SYMPTOMS AND THEIR INTERPRETATION. By James Mackenzie, M.D., M.R.C.P., Physician to the West End Hospital for Nervous Diseases, London. Cloth. Pp. 297. Price, 7 shillings 6 pence. London: Shaw & Sons, 8 Fetter Lane, E. C., 1909.

This contribution by McKenzie is designed to assist in placing Medicine in that position in science which ought of right to belong to her, and to make it less possible for skilled surgeons and diagnosticians to give widely divergent opinions as to the nature of a complaint in some single individual. After an introduction in which Mackenzie emphasizes the importance of accuracy of observation and correctness of method—which, of course, must be based on exact knowledge of anatomy and physiology—the bulk of the work is devoted to analyzing symptoms as they are to be found in practice and emphasizing the misleading and reflex character often assumed. Mackenzie closes by calling attention to the necessity of interpreting the symptoms found, in relation to the body as a whole, and to the particular patient in hand. It is only by bearing in mind every source from which a given symptom may arise that the physician can guard against some unfortunate oversight which may mean only a delay in proper diagnosis or perhaps a more serious result.

To a considerable extent, the work is taken up with the subject of pain and an analysis of what it means in its various presentations; pain being, perhaps, the most common symptom for which the medical man is consulted. The work is not a reaction against laboratory methods of diagnosis, but a very timely contribution out of the ripe experience of a master, which will, if studied, certainly aid the practitioner in developing that far-seeing eye that looks through the oft-conflicting evidence of disease to the ultimate cause.

The book has one disadvantage in having been printed on heavy glazed paper, which was not necessary since the pictures do not require it. We recommend a light-weight paper for the next edition, so that the book may be light and more easily handled. The index, we think, could be expanded a little to advantage.

A TEXT-BOOK OF MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS. By George F. Butler, A.M., Ph.G., M.D., Professor and Head of the Department of Therapeutics, Chicago College of Medicine and Surgery. Sixth Edition. Cloth. Pp. 708. Price, $4. Philadelphia: W. B. Saunders Co., 1908.

This, the sixth edition of Dr. Butler's book, contains but few changes from and additions to the previous edition; those that have been made, however, add to its value. In the new edition we find grindelia classed as a "Motor Depressant," balsam of Peru under the "Aromatic Acids," tar and balsam of tolu as "Drugs Acting on the Respiratory Membranes," while buchu, uva ursi, juniper, copaiba, oil of santal, cubeb and sabal are found under "Drugs Acting Particularly on the Kidneys." In the previous edition all of these drugs were lumped together under the "Group of Aromatics Used Particularly to Stimulate the Mucous Membranes of the Genitourinary or Respiratory Tract." The new arrangement is obviously more rational. We also find that opium, which in the fifth edition was classed under "Hypnotics," is now found more correctly under the "Narcotics." A brief but clear-cut exposition on opsonins and vaccine therapy has been added to the chapter on "Organotherapy." In discussing the probability of a serum therapy for syphilis we read: "The most recent work . . . would seem to show that a spiral organism, *Spirochæta pallida*, bears some relationship to the disease." In the light of our present knowledge of the relationship of the pale spirochete to lues this statement is conservative almost to the point of obsolescence. The arrangement of the book is good looked at from the standpoint of either the undergraduate or the practitioner; the idea of giving the name of each drug in English and in both the nominative and genitive (or in some cases accusative) Latin is an excellent one and should prove a valuable help to the prescription-writer. The chapter on prescriptions which deals with the combination of drugs, incompatibility, antagonism, estimation of amounts, grammatical construction of prescriptions and abbreviations of much-used words and phrases, will be of interest to those physicians—and their number is increasing—who take a pride in accurate and scientific prescribing.

A SYSTEM OF MEDICINE. By many writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Senior Physician, St. George's Hospital. Cloth. Pp. 969, with illustrations. Volume V. Diseases of the Respiratory System, Disorders of the Blood. Price, $6 net. New York: The Macmillan Co., 1909.

The standard of Volume V of this series is equal to that of the previous volumes. Its contents embrace an article by H. Mackenzie on the "Physical Signs of the Lungs and Heart;" "Artificial Aerotherapeutics," by C. T. Williams; "Asthma and Hay Fever," by Goodhart and E. I. Spriggs; "Bronchitis," by William Ewart; "Pneumonia," by Beddard, Eyre and Fawcett; "Abscess and Gangrene," by J. J. Perkins, and "Pulmonary Tuberculosis," by Kidd, Bulloch and Bardswell. A. E. Wright,

Allbutt, Hutchison, Garrod, French, Muir and S. Mackenzie are some of those who take part in the discussion of the disorders of the blood. The affections of the pleura, mediastinum and thymus are also considered. Needless to say, the entire copy of the previous editions has been revised and rewritten with the view to making this system authoritative. We commend particularly the splendid list of references appended to each subject, which can not fail to prove of value to every student of medicine.

ESSENTIALS OF LABORATORY DIAGNOSIS. By Francis Ashley Faught, M.D., Director of the Laboratory of the Department of Clinical Medicine, Medico-Chirurgical College, Philadelphia, Pa. Cloth. Pp. 309, with illustrations. Price, $1.50. Philadelphia: F. A. Davis Co., 1909.

This little manual aims to provide a working outline for clinical laboratory methods, which shall be complete enough for the average student and brief enough for the busy practitioner. In general, this purpose is well achieved, and in spite of Dr. Faught's determination not to "burden the reader with unnecessary detail," he has managed to include a great many helpful practical suggestions, although the clinical interpretation of results must, in a work of this size, be treated very lightly. The chapter on urine is the best in the book, and is especially good, presenting both the theoretical and the practical sides in a complete and available form. The chapter on bacteriology, also, is good, though brief, and gives not only rules for identifying various bacteria, but methods of preparing culture media, sterilization, etc. The chapter on blood is unsatisfactory. The examination of the stained specimen does not receive the attention it merits, and the enumeration of leucocytes is dismissed rather summarily. No plates accompany this part of the work. The chapter on serum reactions and bacterial vaccines shows a lack of practical experience with these methods, and an insufficient appreciation of the difficulties and uncertainties of such procedures. The book is fairly well, but not profusely, illustrated, and contains a valuable appendix giving formulas for stains and other solutions in common use in the laboratory.

LEHRBUCH DER MAGENKRANKHEITEN FÜR AERZTE UND STUDIERENDE. Von Dr. Hans Elsner, Spezialarzt für Magen und Darmkrankheiten in Berlin. Paper. Pp. 490, with illustrations. Price, 12 marks. Berlin: Verlag von S. Karger, 1909.

The work of Dr. Elsner will be especially welcome to those who have become somewhat acquainted with the results of modern research in the department of diseases of the stomach. Physiologic experimentation has gone far enough to establish facts regarding the functions of the stomach that are of wide-reaching applicability and must materially alter the treatment of these diseases. The developments of the last few years have placed in the hands of the practitioner in the large cities and in many of the smaller towns a means of diagnosis, the *x*-ray, which enables the form, position and motor functions of the stomach to be ascertained with a degree of exactness which leaves little to be desired. The results of the modern diagnostic aids form a special feature of the book. The great importance of functional diseases of the stomach is shown by the fact that they form a majority of the cases presenting themselves to the general practitioner and even to the specialist, and it is of great importance that their nature should be clearly recognized. To Stiller is doubtless due in a very large degree the credit of having demonstrated the constitutional and congenital nature of many of these affections. Elsner has clearly recognized the importance of Stiller's teaching and has presented it in a way that will be appreciated by his readers. The book is constructed on the usual plan, consisting of a general and a special part. Theoretical questions and historical matters have in the main been omitted, the space being given to subjects of more practical importance. The presentation of the subject is clear and methodical. The book is well illustrated. It is to be hoped that an English translation will soon appear.

EIGHTH ANNUAL REPORT OF THE WORK OF THE CANCER LABORATORY OF THE NEW YORK STATE DEPARTMENT OF HEALTH. Conducted at the Gratwick Research Laboratory, University of Buffalo. 1907. Paper. Pp. 59.

This report presents several features of interest to all who appreciate the importance of the cancer problem. The director, Dr. Gaylord, has taken the opportunity to review the course and achievements of cancer research in the last decade, which practically covers the existence of the New York Cancer Laboratory, and shows that the advance in this sphere of knowledge, to which his laboratory has made important contributions, has substantially confirmed the theory of the infectivity of cancer to the support of which the early efforts of the laboratory were especially devoted. Several recent observations indicate that this theory will soon bear practical fruit. The discovery of cage infection, and the report of small endemics of animal cancer, as well as the peculiar grouping brought to light by a study of the geography of human cancer, indicate a contagiousness of the disease which makes a certain amount of isolation prudent if not imperative. The discovery of spontaneous cure of mouse tumors and of the power of the blood of normal animals, and especially of convalescents from cancer to destroy the infectivity of cancer cells, give promise of an eventual application to the cure of human cancer.

The article of Gary N. Calkins on "Rhythms of Growth Energy in Mouse Cancer," affords a good insight into the present status of the theory of the pathogenesis of cancer. The cancer cell differs from an embryonic cell in that it shows no power of adaptation, correlation or differentiation and from the ordinary epithelial cell in the possession of an extraordinary vigor of growth and the character of infectivity. These it owes to something within itself. Its parasitic character appears to be inseparable from its cellular existence and must be assumed to be due to the action of some special stimulus. This stimulus is believed to be a micro-organism, perhaps of ultramicroscopic size.

The paper by Dr. Gaylord on spirochetes accompanying cancer indicates a close relationship between these organisms and the growth of cancer. It is suggested that they may act by preparing the soil for the real infecting agent. An interesting fact recorded in the review of the work for 1907 is the discovery of a breeding establishment for mice where cancer is endemic. About 63 tumors have developed in approximately 7,000 mice reared at this place in eighteen months. The introduction of the breeding of white rats has proved that the place is as favorable for the growth of tumors in these animals as in mice. The tumors were mostly cancers of the female breast.

The Public Service

Medical Department of the Army

Changes for the week ended Oct. 2, 1909:

Stephenson, Wm., lieut. col., ordered to Fort Leavenworth, Kan., for duty, on expiration of his present leave of absence.

Davidson, W. T., capt., relieved from duty on the transport *Buford*, and ordered to Columbus Barracks, Ohio, for duty.

De Loffre, S. M., capt., when relieved from duty at Columbus Barracks, Ohio, ordered to Fort Bliss, Tex., for duty.

Manly, C. J., major, when relieved at Fort Bliss, Tex., ordered to Fort Douglas, Utah, for duty.

Bevans, J. L., capt., granted leave of absence for 10 days.

Cowles, C. D., Jr., 1st lieut., relieved from duty in the Philippines Division, and ordered to duty on the transport *Logan*.

Raymond, T. U., major, McLellan, G. H., Mueller, Armin, Frock, C. E., 1st lieuts., relieved from duty at their present stations, and ordered to San Francisco, Cal., to sail December 6, for Philippine service.

Buck, C. D., capt., Rukke, G. V., King, Edgar, 1st lieuts., relieved from duty in the Philippines Division; will sail December 15, for San Francisco, Cal.

Tasker, A. N., 1st lieut., relieved from duty in the Philippines Division, and ordered to duty on the transport *Sheridan*.

Frick, E. B., major, granted leave of absence for 15 days.

Foley, T. M., M. R. C., relieved from duty at Fort Moultrie, S. C., and ordered to Henry Barracks, P. R., for duty.

Drake, P. G., Henry, Z. L., Wiggin, D. C., Bailey, Edward, M. R. C., relieved from duty at their present stations, and ordered to San Francisco, Cal., to sail December 6, for Philippine service.

Bowen, A. G., Crum, W. H., Fletcher, J. P., Holmes, R. W., M. R. C., ordered to active duty; will proceed to Washington, D. C., for a course of instruction at the Army Medical School.

Simpson, J. A., M. R. C., ordered to active duty, will proceed to the Presidio of Monterey, Cal., for duty.

Bundesen, H. N., M. R. C., ordered to active duty, will proceed to Fort D. A. Russell, Wyo., for duty.

Medical Corps of the Navy

Changes for the week ended Oct. 2, 1909:

Von Wedekind, L. L., surgeon, ordered to the Naval Recruiting Station, Chicago, Ill.

Schmidt, L. M., asst.-surgeon, detached from the Naval Recruiting Station, Chicago, Ill., and ordered to the navy yard, Charleston, S. C.

Shippen, L. P., asst.-surgeon, detached from the Navy Yard, Mare Island, Cal., and ordered to Washington, D. C., and report at the Bureau of Medicine and Surgery, Navy Department.

Diehl, O., medical inspector, ordered to duty on board the *Charleston*, as fleet surgeon, 3d squadron, Pacific Fleet.

Davidson, A. B., acting asst.-surgeon, appointed Acting Assistant Surgeon, with rank of Lieutenant (junior grade) from Sept. 27, 1909; ordered to instruction at the Naval Medical School, Washington, D. C.

Minter, J. M., asst.-surgeon, detached from the Naval Recruiting Station, Pittsburg, Pa., and ordered to the Naval Hospital, Norfolk, Va.

Straeten, R. J., asst.-surgeon, detached from the Naval Hospital, Guam, M. I., and ordered to the *Supply*.

Toulon, A. J., asst.-surgeon, detached from the *Supply* and ordered to the Naval Station, Guam, M. I.

Public Health and Marine-Hospital Service

Changes for the seven days ended Sept. 29, 1909:

Bailhache, P. H., surgeon, on leave, detailed for duty on Revenue Cutter *Seminole*, Sept. 25 and 29, and Oct. 1, 1909, in connection with the Hudson-Fulton Celebration.

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from Sept. 22, 1909, on account of sickness.

White, J. H., surgeon, granted 14 days' leave of absence from Sept. 25, 1909.

Sprague, Ezra K., surgeon, granted 16 days' leave of absence from Oct. 8, 1909.

Lavinder, C. H., P. A. surgeon, detailed to represent the Service at the annual meeting of the Mississippi Valley Medical Association, to be held in St. Louis, Mo., Oct. 12-14, 1909.

Moore, Dunlop, P. A. surgeon, Bureau order of Aug. 7, 1909, revoked, directed to proceed to San Francisco, Cal.

Holt, John M., P. A. surgeon, granted 1 month's leave of absence from Aug. 16, 1909.

Wille, C. W., P. A. surgeon, granted 7 days' leave of absence from Sept. 26, 1909.

Warren, B. S., P. A. surgeon, detailed to represent the Service at the annual meeting of the Mississippi Valley Medical Association, to be held in St. Louis, Mo., Oct. 12-14, 1909.

Boggess, J. S., P. A. surgeon, granted 7 days, leave of absence from Sept. 24, 1909, under paragraph 191, Service Regulations.

Collings, G. L., P. A. surgeon, detailed for duty on Revenue Cutter *Androscoggin*, Sept. 25 and 29, and Oct. 1, 1909, in connection with the Hudson-Fulton Celebration.

Herring, R. A., asst.-surgeon, detailed for duty on Revenue Cutter *Mohawk*, Sept. 25 and 29, and Oct. 1, 1909, in connection with the Hudson-Fulton Celebration.

Krulish, E., asst.-surgeon, detailed for duty on Revenue Cutter *Gresham*, Sept. 25 and 29, and Oct. 1, 1909, in connection with the Hudson-Fulton Celebration.

Wood, C. E., asst-surgeon, granted 7 days' leave of absence from Sept. 28, 1909, under paragraph 191, Service Regulations.

Stiles, Charles W., chief, Division Zoology, Hygienic Laboratory, detailed to attend the annual meeting of the Mississippi Valley Medical Association, to be held in St. Louis, Mo., Oct. 12-14, 1909.

Bready, J. E., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 5, 1909.

Gochicoa, A. E., acting asst.-surgeon, granted 30 days' leave of absence from Sept. 12, 1909, 25 days with pay and 5 days without pay.

Goldsborough, B. W., acting asst.-surgeon, granted 1 day's leave of absence, Sept. 30, 1909, without pay.

Horning, Henry, acting asst.-surgeon, granted 15 days' leave of absence from Oct. 4, 1909.

Naulty, C. W., Jr., acting asst.-surgeon, granted 1 day's leave of absence, Sept. 25, 1909.

Terry, M. C., acting asst.-surgeon, granted 21 days' leave of absence from Oct. 1, 1909, with pay, and 9 days from Oct. 22, 1909, without pay.

Underwood, F. R., acting asst.-surgeon, granted 22 days' extension of annual leave from Aug. 23, 1909, on account of sickness.

PROMOTIONS

Assistant Surgeon Hugh de Valin, commissioned a P. A. Surgeon (recess), to rank as such from Sept. 21, 1909.

Assistant Surgeon Marshall C. Guthrie, commissioned a P. A. Surgeon (recess), to rank as such from Sept. 9, 1909.

Health Reports

The following have been reported to the Public Health and Marine-Hospital Service, during the week ended Oct. 1, 1909:

SMALLPOX—UNITED STATES

District of Columbia: Washington, Sept. 11-18, 2 cases.
Illinois: Danville, Sept. 11-18, 1 case.
Massachusetts: Boston, Sept. 11-18, 1 case.
Missouri: St. Louis, Sept. 11-18, 1 case.
Ohio: Columbus, Sept. 11-18, 1 case.
Indiana (8 Counties), July 1-31, 61 cases, 2 deaths.
North Carolina (8 Counties), July 1-31, 50 cases.

SMALLPOX—FOREIGN

Brazil: Bahia, Aug. 6-27, 18 cases, 9 deaths; Rio de Janeiro, Aug. 15-22, 3 cases.
India: Bombay, Aug. 10-17, 2 deaths; Rangoon, Aug. 7-14, 1 death.
Italy, general, Aug. 8-Sept. 5, 18 cases; Naples, Aug. 29-Sept. 5, 9 cases, 5 deaths.
Java: Batavia, Aug. 7-14, 2 cases.
Mexico: Guadalajara, Sept. 3-9, 1 death; Mexico City, Aug. 14-28, 7 deaths.
Portugal: Lisbon, Aug. 28-Sept. 4, 12 cases.
Russia: Moscow, Aug. 21-28, 5 cases, 4 deaths; Odessa, 11 cases; Riga, Aug. 28-Sept. 4, 6 cases.
Spain: Valencia, Aug. 21-28, 1 case; Vigo, Aug. 28-Sept. 4, 1 death.
Tripoli: Tripoli, Aug. 7-28, 26 cases, 5 deaths.

YELLOW FEVER—FOREIGN

Brazil: Bahia, Aug. 6-27, 3 cases, 2 deaths.
Mexico: Merida, Sept. 9-16, 1 case; Veracruz, Sept. 24, 1 case, 1 death, from steamship Mexican.

CHOLERA—FOREIGN

China: Amoy, Aug. 7-14, 12 deaths; Chefoo, Aug. 28, 5 deaths, among Europeans.
India: Bombay, Aug. 10-17, 43 deaths; Rangoon, Aug. 7-14, 2 deaths.
Japan: Amagasaki, Aug. 14-21, 4 cases.
Netherlands: Rotterdam, Sept. 4-11, 1 death.
Russia, general, Aug. 28-Sept. 3, 520 cases, 229 deaths; Moscow, Aug. 21-28, 1 case; Riga, Aug. 28-Sept. 4, 46 cases, 19 deaths; St. Petersburg, 171 cases, 82 deaths.
Sumatra: Djambi, July 15-31, 170 cases, 78 deaths.

PLAGUE—UNITED STATES

California: Alameda County, Sept. 24, 1 case.

PLAGUE—FOREIGN

Brazil: Bahia, Aug. 6-27, 8 cases, 4 deaths.
China: Amoy, Aug. 7-14, 52 deaths; Canton, July 24-Aug. 7, 15 cases, 12 deaths; Hongkong, July 31-Aug. 7, 3 cases, 3 deaths.
Ecuador: Guayaquil, Aug. 21-28, 4 deaths.
Egypt, general, Aug. 19-Sept. 3, 17 cases, 6 deaths; Alexandria, Aug. 21, 1 case, 1 death; Port Said, Aug. 20-24, 1 case, 2 deaths.
India, general, Aug. 7-14, 1,659 cases, 1,251 deaths; Bombay, Aug. 10-17, 35 deaths; Rangoon, Aug. 7-14, 27 deaths.
Japan: Kobe, Aug. 14-21, 1 case, 1 death.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 9. Sec., Dr. F. T. Murphy, Brinkley.

CONNECTICUT: Homeopathic, New Haven, November 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.

CONNECTICUT: Regular, City Hall, New Haven, November 9-10. Sec., Dr. Charles A. Tuttle, 196 York St.

FLORIDA: Jacksonville, November 10-11. Sec., Dr. J. D. Fernandez.

GEORGIA: Regular, Capitol Bldg., Atlanta, October 12. Sec., Dr. E. R. Anthony, Griffin.

ILLINOIS: Coliseum Annex, Chicago, October 20-22. Sec., Dr. J. A. Egan, Springfield.

KANSAS: Topeka, October 12. Sec., Dr. F. P. Hatfield, Olathe.

LOUISIANA: Homeopathic, New Orleans, November 1. Sec., Dr. Gayle Aiken, 1102 St. Charles Ave.

MAINE: Portland, November 9-10. Sec., Dr. Frank W. Searle, 806 Congress St.

MICHIGAN: Lansing, October 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSISSIPPI: Jackson, October 12. Sec., Dr. S. H. McLean.

NEW JERSEY: State House, Trenton, October 19-20. Sec., Dr. E. L. B. Godfrey, Camden.

NEW MEXICO: Santa Fe, October 11-12. Sec., Dr. J. A. Massie.

NEVADA: Carson City, November 1. Sec., Dr. S. L. Lee.

OKLAHOMA: Ione Hotel, Guthrie, October 13. Sec., Dr. Frank P. Davis, Enid.

TEXAS: Levy Bldg., Greenville, November 9-11. Sec., Dr. M. E. Daniel, Honey Grove.

WEST VIRGINIA: Chancellor Hotel, Parkersburg, November 9-11. Sec., Dr. H. A. Barbee, Point Pleasant.

WYOMING: Laramie, October 20-22. Sec., Dr. S. B. Miller.

Higher Entrance Requirements in Boston

Boston University School of Medicine announces that in 1912, besides a four-year high school education, one year of attendance, or its equivalent, at a college or technical school will be required for admission, this year's work to include English, Latin, German or French, mathematics, physics, chemistry and biology.

With twenty-five medical colleges already enforcing this standard and twenty-five others which have pledged themselves to do so, the adoption of thorough courses in these preliminary sciences in the requirements for admission to all our medical colleges in the next few years is practically assured.

Ohio Reciprocity Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, sends us a report of reciprocal licenses issued by that board since Jan. 1, 1909. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1906)	Dist. Colum.
Hahnemann Medical Coll. and Hosp. Chicago	(2, 1908)	Illinois
American Medical Missionary College	(1907)	Illinois
Rush Medical College	(1903) (1906)	Illinois
Northwestern University Med. School	(1907) (1908)	Illinois

Bennett Medical College	(1908)	Iowa
Indiana University	(1908)	Indiana
Indiana Medical College	(1907)	Indiana
Johns Hopkins University	(1905) New York; (1906)	Maryland
Baltimore Medical College	(1902)	New York
Louisville Medical College	(1890)	Illinois
College of Physicians and Surgeons, Baltimore	(1900)	W. Virginia
University of Michigan, Coll. of Med.	(1907) (1908)	Michigan
St. Louis University	(1908)	Illinois
University of Buffalo	(1901)	New York
Starling Medical College	(1893)	W. Virginia
Columbus Medical College	(1887)	W. Virginia
Medical College of Ohio	(1897)	Indiana
Eclectic Medical Institute, Cincinnati	(1891)	Indiana
University of Naples, Italy	(1900)	New York

Ohio June Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports the written examination held at Columbus, June 8-10, 1909. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. Aside from the written examination, practical laboratory tests were required. The total number of candidates examined was 183, of whom 170 passed and 13 failed. The following colleges were represented:

PASSED			
College		Year Grad.	Per Cent.
Denver and Gross College of Medicine		(1906)	80.8
College of Physicians and Surgeons, Chicago		(1906)	76.8
Rush Medical College		(1909)	87.3
Indiana University		(1909)	80.7, 83.9
Harvard Medical School	(1905) 82.8; (1908) 84.1;	(1909)	86, 89.6
University of Michigan, College of Medicine		(1909)	86.2, 87.2
University of Michigan, Homeopathic College		(1909)	86.6 87.6
Starling-Ohio Medical College		(1909)	75.7, 76.2, 76.5, 76.9, 78.4, 78.5, 78.6, 78.8, 79, 79, 80.2, 80.3, 80.4, 80.5, 80.8, 81.1, 81.2, 81.7, 81.9, 82, 82.1, 82.7, 82.9, 83.6, 84.1, 84.4, 84.6, 84.6, 84.8, 85, 85.3, 85.4, 85.5, 85.6, 85.7, 85.9, 86.2, 86.2, 86.5, 86.6, 87.2, 87.2, 88.5, 88.9, 89.8, 90.3,
Medical College of Ohio		(1909)	75, 75.8, 77.5, 77.5, 78.2, 79.4, 80.1, 80.6, 82, 82.4, 82.5, 82.7, 83.2, 83.6, 83.8, 84.3, 85.1, 85.6, 85.8, 86, 86.3, 86.7, 87.1, 87.5, 87.6, 88.1, 89.3, 89.6.
Miami Medical College		(1909)	75.5, 76.1, 77.4, 78.8, 78.9, 82.9, 84.2, 85, 86.1, 87, 87.3.
Western Reserve University		(1908)	82.3; (1909) 79.1, 81.2, 82.3, 82.9, 83.3, 83.7, 84, 84.1, 84.2, 84.5, 84.5, 84.9, 84.9, 85.6, 86.3, 87, 87.1, 88.2, 88.2, 88.5, 89, 90.1, 92.1, 93.7.
Cleveland College of Physicians and Surgeons		(1909)	75.1, 76.1, 78.2, 78.9, 79.8, 80.2, 80.3, 80.8, 81.3, 81.7, 83.5, 83.7, 85.7, 85.9, 86.7, 86.7.
Pulte Medical College		(1909)	80, 86.4, 86.6, 89.9
Cleveland Homeopathic Medical College		(1909)	77.1, 80.8, 81.5, 84.7, 85, 85.6, 86.3.
Eclectic Medical Institute, Cincinnati		(1909)	78.8, 78.9, 79.1, 81.5
Toledo Medical College		(1909)	80.9, 86.9
University of Pennsylvania		(1909)	87.2, 89.4
Medico-Chirurgical College, Philadelphia		(1909)	81.5, 87.3
Jefferson Medical College		(1907) 86.2; (1907) 85.6; (1908)	85.
Hahnemann Medical Coll. and Hosp., Phila.,		(1909)	84.7, 87.3, 88.5
University of Toronto, Canada		(1907)	89.3
McGill University, Montreal, Quebec		(1908)	91.4
Queen's University, Kingston, Ontario		(1908)	86.9
University of Rome, Italy		(1902)	85.5
FAILED			
Illinois Medical College		(1908)	61.
Hering Medical College, Chicago		(1894)	62.1
Starling-Ohio Medical College		(1909)	66.8, 72.4, 72.9
Medical College of Ohio		(1902)	44.2
Miami Medical College		(1909)	63.6, 65.9, 70.6, 73.4
Eclectic Medical Institute, Cincinnati		(1909)	69.6
Toledo Medical College		(1909)	71.2
Meharry Medical College		(1908)	60.7

Arizona July Report

Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, July 5-6, 1909. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 5, of whom 3 passed and 2 failed. The following colleges were represented:

PASSED			
College		Year Grad.	Per Cent.
University of Louisville		(1909)	86.4
University of Michigan		(1902)	83.6
University of Nashville		(1909)	81.7
FAILED			
Hospital College of Medicine, Louisville		(1903)	74.9
University of Michigan		(1909)	72.

Colorado July Report

Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, July 6, 1909. The total number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. Nineteen applicants were examined, of whom 14 passed and 5 failed. Thirty candidates were registered on presentation of satisfactory credentials, including state licenses. The following colleges were represented:

PASSED			
College		Year Grad.	Per Cent.
Denver and Gross College of Medicine		(1909)	76.1, 76.6, 77.5, 77.8, 79.7, 80, 80.7, 80.7, 82.7.
University of Colorado		(1909)	75.8, 81, 84.5
Denver College of Physicians and Surgeons		(1909)	75.7
Rush Medical College		(1909)	83.2
FAILED			
Denver and Gross College of Medicine		(1909)	73.6
Bennett Medical College		(1909)	58.5
Baltimore University		(1897)*	
Ensworth Medical College		(1908)	38.7
Lincoln Medical College		(1908)	61.6

REGISTERED ON CREDENTIALS			
College		Year Grad.	State Licenses
Denver and Gross College of Medicine		(1907)	Wyoming
Rush Medical College	(1899) Iowa;	(1906)	Illinois
College of Phys. and Surg., Chicago		(1906) (1908)	Illinois
Hahnemann Med. Coll. and Hospital, Chicago		(1907)	Missouri
Northwestern University Medical School		(1891) (1908)	Illinois
Keokuk Medical College		(1898)	Iowa
Louisville Medical College		(1908)	Indiana
Coll. of Phys. and Surg., Keokuk,	(1880) Illinois;	(1897)	Missouri
University of Louisville	(2, 1874) Missouri;	(1891)	Kansas
Kentucky School of Medicine		(1888)	New Mexico
University of Michigan		(1908)	Michigan
Creighton Medical College		(1905)	Nebraska
St. Louis Medical College		(1881)	Missouri
Central Medical College, St. Joseph		(1897)	Missouri
Washington University, St. Louis		(1895) (1904)	Illinois
Columbia University, Coll. of Phys. and Surg		(1901)	New York
Cleveland Homeopathic Medical College		(1878)	New York
University of Wooster, Cleveland		(1896)	Ohio
University of Pennsylvania		(1901)	Penna.
Hahnemann Med. Coll. and Hospital, Philada		(1899)	New York
Western Pennsylvania Medical College		(1887)	Penna.
Medical College of Ohio		(1880)	Kentucky
Trinity Medical College, Ontario		(1894)	Michigan

* Percentage not given.

North Dakota July Report

Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, July 6-8, 1909. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 13, of whom 12 passed and 1 failed. Eight reciprocal licenses were issued at this meeting. The following colleges were represented:

PASSED			
College		Year Grad.	Per Cent.
Northwestern University Medical School		(1909)	79.
College of Physicians and Surgeons, Chicago		(1908)	75.
Medical College of Indiana		(1903)	78.
University of Iowa	(1908) 75;	(1903)	83, 87.
Hamline University		(1908)	78.
St. Louis College of Physicians and Surgeons		(1904)	77.
Barnes Medical College		(1904)	79.
Bellevue Hospital Medical College		(1899)	87.
Wisconsin College of Phys. and Surg.	(1905) 80;	(1909)	82.
FAILED			
Keokuk Med. Coll., College of Phys. and Surg		(1908)*	

LICENSED THROUGH RECIPROCITY			
College		Year Grad.	Reciprocity with
Rush Medical College		(1906)	Illinois
Chicago College of Medicine and Surgery		(1908)	Illinois
Bennett Medical College		(1908)	Illinois
Northwestern University Medical School		(1907)	Illinois
University of Minnesota	(1906)	(1907) (1908)	Minnesota
St. Louis University		(1908)	Illinois

* Second examination.

Connecticut July Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, July 13-14, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 26, of whom 21 passed, 4 failed and 1 withdrew. The following colleges were represented:

PASSED			
College		Year Grad.	Per Cent.
Yale Medical School	(1908) 77.6;	(1909)	76.7, 78.8, 80.5, 80.7
Georgetown University		(1908)	80.9
University of Louisville		(1902)	76.8
College of Physicians and Surgeons, Baltimore		(1909)	75.2
Baltimore Medical College		(1909)	76.4, 82.
Harvard Medical School		(1894)	75.5
Columbia University, College of Phys. and Surg.		(1909)	89.1
Long Island College Hospital		(1908)	82.2
Syracuse University		(1908)	78.8
University and Bellevue Hospital Med. College		(1909)	80.9
Cornell University Medical College		(1902)	84.

Medico-Chirurgical College, Philadelphia	(1909)	79.1
Jefferson Medical College	(1909)	79.2
University of Pennsylvania	(1909)	75.7
University of Vermont	(1909)	81.5, 82.2

FAILED

Maryland Medical College	(1908)	69.9
Jefferson Medical College	(1909)	72.6
University of Vermont	(1903)	73.6
University of Naples, Italy	(1905)	68.4

Maine July Report

Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, reports the written examination held at Augusta, July 13-14, 1909. The number of subjects examined in was 12; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 31, of whom 26 passed and 5 failed. Three reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Medical School of Maine, (1908) 83.7; (1909) 82.8, 84.6, 85, 85, 85.6, 88.2, 88.2, 89.3, 89.6, 90.6, 91, 91.5, 92.4.		
Baltimore Medical College	(1909)	76.5
Maryland Medical College	(1909)	83.5, 86.6
Atlantic Medical College	(1909)	78.6, 86.2
Boston University	(1891) 91.6; (1909)	91.
College of Phys. and Surg., Boston, (1901) 86.3;	(1909)	86.3
University of Michigan	(1909)	83.3
Women's Medical Coll. of the New York Infirmary,	(1884)	94.3
Jefferson Medical College	(1896)	87.4

FAILED

Atlantic Medical College	(1909)	73.6
College of Physicians and Surgeons, Boston	(1903)	72.6,‡ 81*†
Laval University, Quebec	(1903)	76.2*
Bishop's College, Montreal, Quebec	(1905)	79.8*

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Baltimore	(1899)	Maryland
Johns Hopkins University	(1904)	Maryland
Laval University, Montreal, Canada	(1899)	Minnesota

* Fell below 60 in one or more branches.
† Second examination.
‡ Third examination.

Connecticut Homeopathic July Report

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, July 13-14, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 8, of whom 3 passed, 4 failed and 1 was conditioned. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
New York Homeo. Med. Coll. and Hosp.	(1907) 89; (1908)	78.7
Hahnemann Med. College and Hosp., Philada.	(1909)	85.4

FAILED

Hahnemann Med. College and Hospital, Chicago	(1909)	62.2, 65.1
Atlantic Medical College	(1909)	53.7
Boston University	(1905)	64.3

Marriages

HARVEY LEONARD, M.D., to Miss Neva Bell Drase, at Easton, Md., September 22.

J. KNOX INSLEY, M.D., Tangier, Va., to Miss Helen Horn, at Baltimore, September 18.

GEORGE HENRY SCHROEDER, M.D., to Miss Elsa Niemeyer, both of Chicago, September 18.

WALTER S. CHERRY, M.D., to Miss Frances Phillips, both of Table Rock, Neb., September 21.

PENDLETON GARDNER, M.D., Haileyville, Okla., to Miss Ida A. Flickinger of Arcola, Ill., September 16.

SAMUEL LUTHER BARE, M.D., to Miss Nellie Ruth Schaeffer, both of Westminister, Md., September 22.

WILLIAM H. COOGAN, M.D., Bryn Mawr, Pa., to Miss Alice L. Prince of Vineland, N. J., September 18.

ALEXANDER M. MACAULAY, M.D., Belt, Mont., to Miss Anna M. Eitelgoerge of Rome, Ind., September 7.

ELIAS BURTON HOWELL, M.D., Tiffin, Iowa, to Miss Bertha Hemsworth of Cedar Falls, Iowa, September 23.

JOHN JACOB REMSBERG, M.D., Walkersville, Md., to Miss Harriet English Everett, at Hamilton, Va., September 22.

Deaths

George Cuvier Harlan, M.D. University of Pennsylvania, Philadelphia, 1858; of Philadelphia; a member of the American Medical Association; of Philadelphia; surgeon in the Navy and later surgeon of the Eighth Pennsylvania Volunteer Cavalry in the Civil War; a member and once president of the American Ophthalmological Society and Philadelphia College of Physicians; consulting surgeon to Will's Eye Hospital; ophthalmologist to the Pennsylvania Hospital and Pennsylvania Institute for the Blind and Pennsylvania Institute for the Deaf and Dumb; emeritus professor of diseases of the eye in the Philadelphia Policlinic; chief of the ophthalmologic section at the Louisiana Purchase Exposition, St. Louis; died in Chestnut Hill Hospital, after being thrown from a horse, September 22, sustaining a fracture of the spine, aged 74.

Xenophon Christmas Scott, M.D. Western Reserve University, Cleveland, 1867; College of Physicians and Surgeons, New York City, 1869; a veteran of the Civil War; for many years a member of the American Medical Association; formerly president of the Mississippi Valley Medical Association; ophthalmic and aural surgeon to the German Hospital, Cleveland; and professor of ophthalmology, otology and laryngology in the Western Reserve University; founder and surgeon-in-chief of the Cleveland Eye, Ear and Throat Institute; in charge of a military hospital in Heidelberg during the Franco-German war; a well-known specialist on diseases of the eye; died at his home in Cleveland, September 30, from cerebral hemorrhage, aged 66.

John Janvier Black, M.D. University of Pennsylvania, Philadelphia, 1862; a member of the American Medical Association; College of Physicians, Philadelphia, and National Association for the Study and Prevention of Tuberculosis; acting assistant surgeon U. S. Army, from 1862 to 1864; president of the board of trustees of the Delaware State Hospital, Farnhurst; and a trustee of Delaware College, Newark; authority on the culture of fruit trees and author of "Forty Years in the Medical Profession;" died at his home in New Castle, Del., September 27, from uremia, aged 71.

William H. Felton, M.D. Medical College of Georgia, Augusta, 1844; four years later ordained a clergyman of the Methodist Episcopal Church South; a volunteer surgeon in the Confederate service during the Civil War; a member of the forty-fourth, forty-fifth and forty-sixth congresses from the seventh district of Georgia; and for four terms a representative in the state legislature; died at his home in Cartersville, September 24, from acute gastritis, aged 86.

Leonard Warring Arnold, M.D. Medical College of Ohio, Cincinnati, 1877; Vanderbilt University, Nashville, Tenn., 1882; health officer of Florence, Ala.; a member of the board of censors of Lauderdale county; formerly president of the local board of U. S. pension examining surgeons; local surgeon of the Louisville and Nashville Railroad; died in Memphis, Tenn., September 25, from cerebral hemorrhage.

Edwin Rutherford Willard, M.D. Rush Medical College, Chicago, 1852; of Joliet, Ill.; a member of the American Medical Association; consulting surgeon to St. Joseph's and Silver Cross hospitals, Joliet; surgeon of the Thirteenth Illinois Volunteer Cavalry during the Civil War; died at his old home in Wilmington, Ill., June 22, from nephritis, aged 79.

Francis Marion Slemons, M.D. University of Maryland, Baltimore, 1860; a member of the Medical and Chirurgical Faculty of Maryland; and for forty-nine years a practitioner of Salisbury; clerk of the Circuit Court of Wicomico county from 1885 to 1891; died at the home of his son in Baltimore, September 22, from cerebral hemorrhage, aged 70.

Edward N. Shaw, M.D. Atlanta (Ga.) Medical College, 1884; a member of the Milam County (Texas) Medical Society; major and surgeon Fourth Texas Infantry, U. S. V., during the Spanish-American War; major and surgeon Texas National Guard; owner and superintendent of the Milam Hospital; died in that institution, August 31, aged 48.

James G. Hart, M.D. Eclectic Medical Institute, Cincinnati, 1873; a member of the Kentucky State Medical Society, and twice president of the Western Kentucky Medical Society; supreme medical director of the National Fraternal Union; died suddenly at his home in Murray, September 23, from heart disease, aged 60.

Edgar I. Bradley, M.D. College of Physicians and Surgeons, Chicago, 1894; a member of the American Medical Association; formerly secretary of the Madison County (Mont.) Medical Society, and owner of the Virginia City Hospital; died at his home in White Sulphur Springs, Mont., September 21, aged 38.

William Hart Withrow, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1883; formerly of Spring Station, Ky.; for four and a half years assistant superintendent of the Minnesota State Hospital, Rochester; died at the home of his sister in Minneapolis, September 12, from paresis, aged 52.

Henry F. Battey, M.D. Cleveland University of Medicine and Surgery, 1884; formerly of Boulder, Colo.; died in McAllen, Texas, February 17, from the effects of a gunshot wound, self-inflicted, it is believed with suicidal intent, while despondent on account of ill health, aged 46.

James D. Guy, M.D. Geneva (N. Y.) Medical College, 1868; a member of the Medical Society of the State of New York; health officer of the township of Chenango; and coroner of the northern district of Broome county; died at his home in Chenango Forks, September 15, aged 68.

Simeon Palmer Lloyd, M.D. University of Pennsylvania, Philadelphia, 1893; city physician of Savannah, colored department, from 1895 to 1900; a member of the medical staff and treasurer of the Charity Hospital for the Colored; died at his home in that city, September 25.

John B. White, M.D. University of Tennessee, Nashville, 1882; of Fall Branch, Tenn.; for fifty-two years a practitioner; at one time a representative from Washington county in the legislature; died at the home of his daughter in Baileyton, Tenn., September 9, aged 78.

Orrin Hayden Evans, M.D. Starling Medical College, Columbus, Ohio, 1898; formerly city physician of Springfield, Ohio; a member of the Clark County Medical Society; died at the home of his mother in Jackson, Ohio, September 20, from pulmonary tuberculosis, aged 35.

John Willis Mitchell, M.D. Jefferson Medical College, Philadelphia, 1889; of Clarksville, Ark.; physician of Johnson county; a member of the Arkansas Medical Society; was shot and killed by his business partner at Clarksville, September 11, aged 42.

Ernest Edward Barker, M.D. State University of Iowa, Iowa City, 1907; a member of the North Dakota Sixth District Medical Society and health officer of Underwood; died suddenly at his home, September 9, from cerebral hemorrhage, aged 28.

George H. Berry, M.D. Washington University, Baltimore, 1848; Georgetown University, Washington, D. C., 1850; a member of the Somerset County (Md.) Medical Society; died at his home in Hopewell, September 10, from rheumatism, aged 84.

Albert Michael Fischer, M.D. College of Physicians and Surgeons, Chicago, 1906; of Kaukauna, Wis.; a member of the American Medical Association; died in St. Mary's Hospital, Oshkosh, Wis., September 21, from anterior poliomyelitis, aged 27.

Walter H. Vinal, M.D. College of Physicians and Surgeons, Baltimore, 1897; a surgeon of volunteers during the Spanish-American War with service in Cuba; died at his home in Hamilton, near Baltimore, September 27, from pneumonia, aged 35.

Gardner C. Wood, M.D. New York University, 1846; representative from Somers, Conn., in the general assembly in 1862; for more than half a century a fruit culturist and scientist; died at his home in Somers, March 7, aged 85.

Alfred M. Webster, M.D. Chicago Homeopathic Medical College, 1887; general secretary of the New Era Association of Grand Rapids, Mich.; shot and killed himself in the office of the organization, September 30, aged 60.

Fenton G. Helms, M.D. Cincinnati College of Medicine and Surgery, 1873; a member of the Ohio State Medical Association; formerly a member of the city council of Uhrichsville; died at his home, September 24, aged 59.

Clifford Llewellyn Pike, M.D. Medical School of Maine, Brunswick, 1881; formerly secretary of the Oxford County (Maine) Medical Society; died at his home in Saco, Maine, September 20, from pneumonia, aged 50.

John James Babington, M.D. Long Island College Hospital, Brooklyn, 1894; a member of the Medical Society of the State of New York; died suddenly at his home in Brooklyn, September 27, from angina pectoris, aged 51.

James L. Penney, M.D. Western Reserve University, Cleveland, 1873; for half a century a physician of McKeesport, Pa.; assistant surgeon of volunteers during the Civil War; died at his home, September 21, aged 71.

William Caldwell, M.D. University of Dublin, Ireland, 1848; for two years editor of the Blairsville (Pa.) *Appalachian;* died at the home of his daughter in Johnstown, Pa., September 13, from senile debility, aged 81.

Marshall Alexander Gilreath, M.D. University of Nashville and Vanderbilt University, Nashville, Tenn., 1891; of Selma, Cal.; died in the Selma Sanitarium, September 22, from intestinal obstruction, aged 46.

Earl Carlton Smith, M.D. Eclectic College of Physicians and Surgeons, Indianapolis, 1893; of Indianapolis; died suddenly at the home of his sister in that city, September 19, from heart disease, aged 37.

Henry R. Case, M.D. George Washington University, Washington, 1873; a member of the American Medical Association; died at his home in Flint, Mich., Dec. 5, 1908, from cancer of the neck, aged 60.

Enoch Mills Baker, M.D. New York University, New York City, 1890; a member of the American Medical Association; died suddenly at his home in Jersey City, N. J., from spinal disease, aged 48.

Martin H. Calkins, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1868; a member of the Iowa legislature from 1882 to 1884; died at his home in Wyoming, September 28, aged 81.

Joseph Carson Beckham, M.D., one of the oldest practitioners of Zebulon, Pike county, Ga.; died at the home of his son in Atlanta, Oct. 31, 1908, from cerebral hemorrhage, aged 88.

Frederick Cobbold McCallum, M.D. University of Toronto, 1866; Bellevue Hospital Medical College, New York City, 1866; died at his home in Hersey, Mich., September 18, from jaundice.

John Alexander Harper, M.D. Memphis (Tenn.) Hospital Medical College, 1896; of Lux, Miss.; died in Hattiesburg, Miss., January 14, from carcinomma of the cecum, aged 47.

W. Gregg Austin, M.D. Memphis (Tenn.) Hospital Medical College, 1893; a member of the Mississippi State Medical Association; died at his office in Utica, September 25, aged 44.

Robert Marion West, M.D. University of Louisville (Ky.), 1860; a member of the American Medical Association; died at his home in Clarendon, Ark., September 23, aged 77.

Charles W. Harper, M.D. University of Maryland, Baltimore, 1869; died at his home in Halethorpe, near Baltimore, May 14, from senile debility, aged 71.

Alfred Ernest Pleavin, M.D. Bennett Medical College, Chicago, 1906; died at his home in Elgin, Ill., September 22, from acute meningitis, aged 29.

Emmett E. Richardson, M.D. Cleveland University of Medicine and Surgery, 1893; died at his home in Dundee, Mich., September 18, aged 50.

Robert E. Tweedy, M.D. University of Pennsylvania, Philadelphia, 1856; died at his home in Courtland, Ala., August 27, aged 78.

Milton D. M. Batdorf (license, Berks county, Pa.); of Bethel, Pa.; died March 7, from cerebral hemorrhage, aged 65.

George W. Bell (license, Mo., 1892); an eclectic practitioner of Kansas City; died at his home, June 19, aged 71.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

CORRECTION: Through a mistake, in THE JOURNAL, September 25, the wrong program appeared under the heading, "First Month—Fourth Weekly Meeting." Instead of "Diseases of Cerebral Veins and Sinuses, etc.," there should have appeared "Surgery of Pericardium and Heart, etc.," printed below.

First Month—Fourth Weekly Meeting

SURGERY OF PERICARDIUM AND HEART

PERICARDIUM: Injuries; diagnosis and treatment. Hemopericardium and hydropericardium; diagnosis of each. Indications and technic of aspiration of pericardium, of pericardiotomy.

HEART: Injuries, character of wounds. Indications for surgical treatment.

SURGERY OF MEDIASTINUM

INJURIES: Rarity, structures injured.

MEDIASTINITIS, ACUTE AND CHRONIC: Etiology.—Acute, external and internal wounds, extension from adjacent viscera, cellulitis of neck, etc. Chronic, tuberculosis, caries of vertebra, etc. Symptoms. Treatment.

TUMORS OF MEDIASTINUM

Varieties. Symptoms and diagnosis.

Monthly Meeting

The Treatment of Penetrating Wounds of the Thorax.
The Symptoms and Diagnosis of Empyema.
The Present Status of the Surgery of the Heart.

REFERENCE BOOKS FOR THE FIRST MONTH

Beck: Surgical Diseases of the Chest.
Keen: Surgery.
Bryant and Buck: Practice of Surgery.
Von Bergman and Bull: System of Surgery.
Paget: Surgery of the Chest.
Ricketts: Surgery of Heart and Lungs.

Second Month—Second Weekly Meeting

DISEASES OF THE BRAIN

DISEASES OF THE MENINGES

PACHYMENINGITIS INTERNA: Etiology, age, sex, alcohol, acute infection. Pathology, changes in dura, in pia, in blood-vessels. Presence of (a) subdural vascular membrane; (b) simple subdural hemorrhage. Changes in brain structure. Diagnosis.

PIAL HEMORRHAGE: In new-born, frequency, location, causes, immediate effects, remote effects. In later life, causes, location, symptoms.

LEPTOMENINGITIS: Etiological classification.* 1. Primary, (a) cerebrospinal fever (diplococcus intracellularis, (b) pneumococcic (pneumococcus). 2. Secondary (due to bacillus tuberculosis, pneumococcus, pyogenic cocci (streptococci and staphylococci), acute infections (typhoid, influenza, diphtheria, etc.). Symptoms. History of previous infection. Invasion period. Headache, delirium, convulsions, vomiting, constipation, muscular rigidity. Basilar symptoms. Course and terminations.

CEREBRAL ANEMIA AND HYPEREMIA: Etiology, diagnosis and prognosis of each.

CEREBRAL ARTERITIS:† Etiology and pathological changes of (a) acute arteritis, (b) periarteritis, (c) chronic arteritis (atheroma), (d) arteriosclerosis, (e) syphilitic arteritis.

Society Proceedings

COMING MEETINGS

Amer. Association of Railway Surgeons, Chicago, October 20-22.
American Public Health Association, Richmond, Va., October 19-22.
Hawaiian Territorial Medical Society, Honolulu, November 19.
Kentucky State Medical Association, Louisville, October 19-21.
Medical Association of the Southwest, San Antonio, Tex., Nov. 9-11.
Minnesota State Medical Association, Winona, October 13-14.
Mississippi Valley Medical Association, St. Louis, October 12-14.
Nevada State Medical Association, Goldfield, November 2.
Southern Medical Association, New Orleans, November 9-11.
Vermont State Medical Assn., White River Junction, Oct. 14-15.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Fifty-Ninth Annual Session, held in Philadelphia, Sept. 27-30, 1909

The President, DR. GEORGE W. WAGONER, Johnstown, in the Chair

Address of Welcome and Presentation of Flag

DR. FREDERICK P. HENRY, Philadelphia, delivered an address of welcome on behalf of the Philadelphia County Medical Society and presented to the society a flag designed by a committee of the county society. The flag was accepted by the president on behalf of the state society and a motion was passed by a rising vote that it be accepted as the official banner of the Medical Society of the State of Pennsylvania.

An address of welcome was also made by the Hon. John E. Reyburn, mayor of Philadelphia.

Secretary's Report

The state of the society was reported by the secretary, Dr. Cyrus L. Stevens, Athens. The sixty-three component county societies were stated to have done more scientific work and to have held better meetings during the year than in any previous year. The present membership is 5,207, a net gain of 203 during the year.

President's Address: Physicians and the Public

DR. GEORGE W. WAGONER, Johnstown: There seems to be a lack of harmony between the public and the medical profession which has caused antagonism and open warfare on matters of immense importance to all, and a disinclination on the part of the public to deal fairly with subjects which all true medical men consider necessary to the welfare of the public and the profession. If the reason for this antagonism can be discovered, some method may be devised by which the public mind may be disabused; but while pointing out the injustice of the public we should not be blind to our own shortcomings. If in ordinary active practice we are more interested in watching and noting the phenomena of disease than in securing the comfort of the patient, we are missing the true object of our science and art, which is helpfulness. If we attempt to prove theories in the application of remedies while our patients linger in uncertainty and disability, then do we fail in helpfulness. If we clash over the minute and technical measures while neglecting the fundamental means of renewing life and health, we fail to be helpful. The keynote of success is helpfulness. If it be helpfulness on scientific observation, deduction and knowledge, it marks the highest and most desirable attainment possible to an educated physician. The sick are not cured by knowledge alone. But knowledge joined with gentleness, tact, amiability and sincere sympathy is invincible. The true ideal for a medical man is to become a bringer of peace to those entrusted to his care, rather than to acquire a store of worldly goods by commercializing his work among his people. Three hindrances to this ideal are ignorance, superstition, and incompetence; ignorance on the part of the public of the basic motives which have caused unselfish physicians to assume their life-work of personal sacrifice and responsibility for the good of others; ignorance concerning the benefits of prevention rather than the cure of disease. Notwithstanding the claims to enlightenment there is a taint of absurd superstition corrupting the mental processes of multitudes of people. Incompetence among medical men is an ever-present danger to the public. The most important problem concerning the dignity and material welfare of the medical profession to-day is to convince men, women and children that we as physicians strive to be helpful and to protect them from disasters following ignorance, superstition, disease and incompetency; that we desire to advance the standard of preliminary and scientific education of all physicians so that competency may be rewarded and incompetency be rejected by the public. Let us all open our minds to truth wherever found; our hearts to its disciples under whatever name they may be known, and as the highest object of our professional lives strive only to be bringers of peace to our fellow men.

Sanitary Science and the Social Evil

REV. FLOYD W. TOMKINS, D.D.: This evil is becoming so tremendous that a man must recognize that he fulfills his duty neither to God, to man, nor to himself unless he looks into it, and studies and plans to see what can be done. I count it a privilege to say a few words as a minister who has long been interested in this subject, and to urge on you the eradication of this disease in comparison with which the spread of tuberculosis is as nothing. This is not merely a general question

* Osler: Practice, 6th edition, page 926.
† Church and Peterson: Nervous and Mental Diseases, 6th edition.

of purity or impurity. Let me give you an illustration which is only one of a thousand which could be given and one of which I have direct knowledge. A young man married, though infected with this disease. His health soon failed, tuberculosis developed, and he was about to die. On his death bed his wife said to him: "You have poisoned my body and ruined my life, and I pray God that in hell your mind may suffer just retribution." That is not an isolated case. We ministers know about cases that make our hearts ache and yet we are absolutely helpless in the vast majority of them. What can you and I do practically about it? Cannot we at first educate those with whom we come in contact? Cannot we put aside that modesty to which, God knows, we would like to hold to ourselves? Most of us would be glad to go back to the innocence that we had in our childhood. Why should we not urge on mothers that they teach their daughters concerning this evil, teach them not only to be pure in mind and body, but warn them of this terrible evil which is spreading through the land with such fearful results. Much can be done in this and other directions if we will only be honest enough, fearless enough, high-minded enough to recognize our responsibility.

(*To be continued*)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty-Second Annual Meeting, Held at Fort Wayne, Ind., Sept. 21-23, 1909

(*Continued from page 1122*)

Surgical Treatment of Tumors of the Bladder

DR. JOHN W. KEEFE, Providence, R. I.: The surgery of tumors of the bladder is in a transitional state. The last word has not been said. While the perineal and vaginal routes have been abandoned by most surgeons, some now prefer the urethral, while others the suprapubic extraperitoneal, and yet others the abdominal intraperitoneal route, or a combination of both. The medical treatment of tumors of the bladder is often prolonged until surgery is of no avail. The suprapubic operation is the method most frequently employed at the present time, although the abdominal intraperitoneal route has many points in its favor. It gives one plenty of room in which to operate, and one can see exactly where to excise or cauterize the growth. The choice of the anesthetic is important for consideration in the removal of bladder tumor, as the patients are often found in a debilitated condition from loss of blood, sepsis or diseased kidneys. Nitrous oxid gas and oxygen are preferable on account of their safety and the non-irritation of the kidneys. The operation may be rapidly performed, and takes much less time than it does to describe it.

DISCUSSION

DR. C. C. FREDERICK, Buffalo: I have operated on three patients for malignant disease of the bladder. In the first case, which occurred six or seven years ago, the tumor was located in the posterior wall of the bladder, in women, just back of the trigone. Following the removal of the tumor she made a good recovery, went on for two or three years, and I supposed was going to get perfectly well. But she had a recurrence to the left side of the original scar. She did not have a secondary operation, and eventually died of anemia.

DR. ERNST JONAS, St. Louis: With the cystoscope we are able to decide the size of the tumor, but not its character.

DR. M. I. ROSENTHAL, Fort Wayne: In a case of cancer of the uterus, which involved the bladder, I did a radical operation for the removal of the uterine cancer, also removing a piece of the bladder in a woman of 58. She is still in fairly good health.

Chylous Cyst of Iliac Mesentery

DR. CHARLES E. CONDON, Buffalo: The patient in this case was a boy, 5 years and 11 months old. The usual incision for an apppendix operation was made. On opening the abdomen a tense cystic tumor presented, which resembled an ovarian cyst, but was more elastic and had the color of omentum. On enlarging the abdominal incision, the tumor was found to be the distended iliac mesentery, beginning about eighteen inches above the ileocecal valve. It was ovoid, with a valley lodging the bowel, and dwindling toward the posterior mesenteric attachment into a wedge-shaped separation of the mesenteric layers. The ileum corresponding to the mesenteric cyst was compressed into a white cord, while above it was distended. After incising the cyst, about two quarts of milky fluid gradually drained away, there was a reduction of tension, allowing the vessels of the bowels to fill and the pallor to disappear, while the relief of pressure caused the lumen of the bowel to become patulous, and the distention above passed away. The cyst was sutured to the abdominal incision, and was drained by a rubber tube held in place by a stitch; otherwise the abdominal incision was closed with through-and-through sutures of silkworm gut. The relief was almost immediate.

DISCUSSION

DR. MILES F. PORTER, Fort Wayne, Ind.: In one case, on opening the abdomen, I found that I had a volvulus to deal with, but in unravelling the volvulus I found that it was due to chylous cysts of the mesentery. The gut was resected, but the patient died from the continued progress of the peritoneal infection.

DR. ERNST JONAS, St. Louis: In regard to intestinal obstruction, produced by chylous cyst, I wish to emphasize the importance of not giving medicines with a view to relieving such intestinal obstruction when it is caused by these cysts. We should never try at this stage in surgery to remedy ileus by medicine, which we give to patients by mouth, as it is impossible to accomplish anything by them in any case of true obstruction.

DR. A. H. FERGUSON, Chicago: I have never encountered a chylous cyst of the mesentery in my surgical experience, and I think it is well for us in discussion of such papers to point out the relative infrequency of these cases.

The Embryo Abdominal Surgeon with Inadequate Preparation and Knowledge

DR. J. HENRY CARSTENS, Detroit: In every large center, say the county seat, there ought to be a hospital and a surgeon, or surgeons, who not only have picked it up but who have been prepared for the work by a thorough course of hospital training; and it seems to me that these men should limit their practice to surgery, and not compete with their colleagues. State boards should take up this question and issue a special license to those who want to practice special lines of surgery. In conclusion I would say: 1. Abdominal surgery by embryo surgeons should be prohibited. 2. Thorough preparation in a proper hospital, as an assistant for one year, should be the minimum requirement. 3. Those who want to practice abdominal surgery should furnish evidence of qualification. 4. Nothing herein contained should prevent any general practitioner from doing abdominal surgery in an emergency.

When Shall We Operate for Ruptured Ectopic Gestation?

DR. R. R. HUGGINS, Pittsburg, Pa.: It has been my custom always to delay operation for a few hours in ruptured tubal pregnancy when all signs pointed toward a temporary cessation of the hemorrhage. In the vast majority of instances the hemorrhage has ceased temporarily when the consultant is called. The length of time which has passed since the hemorrhage begun varies. The attending physician will usually say that when he first saw the patient she was in a state of collapse, but that now, that is several hours later, there is some improvement. The pulse is slightly better, the air hunger has disappeared, etc. A pulse which was hardly perceptible when he first saw the patient is now easily counted and is of better volume; reaction has already begun. The formation of a clot in the pelvis has plugged the bleeding point and the force of the blood stream is now so low that for a time, at least, there is little danger of recurring hemorrhage. Who can say, and by what means are we to determine, how long this period of apparent rescue from death by Nature's efforts may continue? Doubtless in many cases hemorrhage does not recur, but my ex-

perience convinces me that some further advance must be made in diagnostic skill before it can be said that hemorrhage, severe, and even fatal, may not recur in a given case. A series of experiments on 50 dogs showed the coagulating time of the blood to average 3 minutes 28.10 seconds. The average time in 50 normal individuals taken by the same instrument was 6 minutes 45 seconds. There is a considerable difference in the time of coagulation of the blood of the dog as compared to the human. There is undoubtedly greater protection against continued hemorrhage in the dog because of this rapid coagulability of the blood. We all know that owing to the increased blood supply to the pelvic organs during pregnancy a small wound made in the uterus or in fact in any part of the pelvis will bleed profusely. Without careful consideration of these facts, experiments on animals in the study of this subject are of no practical importance. It is irrelevant to compare hemorrhage from other parts of the body to that which occurs from the torn vessels of a congested pregnant tube.

Recent papers advocating delay in operation have served an important purpose, because they have emphasized the fact that the patient usually rallies from the primary hemorrhage and that it is unnecessary, as a rule, to operate while the patient is in extreme shock. It is undoubtedly true that in a large percentage of the cases a few hours can be well spent in allowing the patient to react so that operation will be attended by less danger. That it can be postponed indefinitely without great risk to the patient has not been true in my experience.

DISCUSSION

DR. H. W. LONGYEAR, Detroit: There should be no hesitation on the part of the surgeon in regard to the necessity of operating immediately in cases of recent ruptured tubal pregnancy.

DR. HUGO O. PANTZER, Indianapolis: Standing as we do in this class of cases oftentimes in the presence of doubt, when life is menaced, we cannot decide otherwise than to chance it with the doubt in favor of an operation.

DR. W. H. HUMISTON, Cleveland: To me delay is dangerous doctrine. There should be very little trouble in making a diagnosis of ruptured ectopic pregnancy. If the rupture is sufficient to cause shock one cannot tell whether the shock will be overcome or not, and I do not hesitate to operate on all these patients who come into my hands whether they are in shock or not.

DR. THOMAS B. NOBLE, Indianapolis: It is bad teaching to advise delay in operating in cases of ruptured ectopic pregnancy. When Dr. Robb advocated procrastination, I said that some women would die as the result of such teaching. I wish to subscribe *in toto* to the advice given by Dr. Huggins, and to affirm that these patients should be operated on immediately.

DR. A. B. MILLER, Syracuse, N. Y.: We should not procrastinate in operating in these cases of ruptured ectopic pregnancy promptly. In over a hundred patients operate on immediately I have only lost three.

DR. JOHN YOUNG BROWN, St. Louis: I have seen a number of cases of ectopic pregnancy, and I have not been able to reason out from this experience why gynecologists should differ as to the proper time to operate. With modern methods of combating shock, and particularly by the use of salt solution by hypodermoclysis and by the method which Andrews has accentuated in the treatment of gunshot wounds in which the hemorrhage is severe, namely, buttonholing the upper abdomen as soon as the abdomen is opened, and starting the salt solution to flow immediately on the opening of the abdomen, a large majority of these patients can be saved by prompt action.

DR. ALBERT GOLDSPOHN, Chicago: Of 80 cases of ectopic pregnancy that I have dealt with in one way or another, I have only known of 2 patients to die from this affection who were not operated on.

DR. C. C. FREDERICK, Buffalo: I have operated on about 130 or 140 patients with ectopic pregnancy in my city; 5 per cent. of these have been rapidly bleeding cases, and the other 95 per cent. were cases in which rupture had taken place and there were symptoms of recurrent bleeding extending over a period of 2, 3, 4 or 5 weeks, or even 6 months. I have operated on women who have had recurrent hemorrhages five or six months after the primary rupture. I recall one case in which hemorrhage stopped, the woman did not have another rupture, and she was not operated on. All things considered, I am in favor of early operation in cases of ruptured ectopic pregnancy. I believe we should insist on stopping hemorrhage in these cases, as well as bleeding which may take place in any other part of the body, namely, by tying the bleeding vessel and stopping the hemorrhage.

DR. M. I. ROSENTHAL, Fort Wayne, Ind.: It has been my practice to operate on these cases of ruptured ectopic pregnancy as soon as the diagnosis is made. In all the cases that I have diagnosed early and in which I have operated, there have been no deaths, but in those that were operated on late I got a mortality in each case.

DR. E. GUSTAV ZINKE, Cincinnati: It is just as wrong to say that every patient with ectopic gestation must be operated on as it is that every case of this nature does not need operation. There are patients who recover without operation. This should not be forgotten. Most gynecologists probably know of instances in which operation has been proposed with counsel and without counsel, was refused by the family, and patients have recovered, and they had the laugh on the operators. I agree with Dr. Robb, and I must protest against operating in every case of ruptured ectopic pregnancy.

DR. J. HENRY CARSTENS, Detroit: If a woman is suffering from internal hemorrhage, as that from a ruptured ectopic pregnancy, she ought to be operated on promptly. I believe in operating in these cases promptly.

Rupture of the Uterus

DR. RALPH W. LOBENSTINE, New York: Ruptures of the uterus during labor may be divided into complete, and incomplete ruptures of the vaginal vault. Of the 78 cases in a series of 78, at the New York Lying-in Hospital, there were 46 complete ruptures, 29 incomplete, and 3 ruptures of the vaginal vault. The etiology of the complete ruptures was as follows: (1) Spontaneous ruptures were due to pelvic contraction in 21 cases; Cesarean section scar, 2 cases; scar tissue after amputation of cervix, 1 case; transverse presentations, 3 cases; and hydrocephalus, 1 case. (2) Traumatic ruptures were due to high forceps, in 3 cases; internal podalic version, 5 cases; *accouchement forcé*, 6 cases; and embryotomy, 1 case. (3) Ruptures due both to version and transverse presentation, 3 cases. It is noteworthy that the large percentage of complete ruptures occur in multiparæ, and especially in patients in whom the uterine musculature has been weakened by inflammation.

The common location for the rupture is the lower uterine zone. There are two fundamental types, the longitudinal and the transverse, but there is often more or less fusion of these types. In the list there were 26 that probably started as the vertical type, and 20 as the transverse. Of the 26 longitudinal tears 18 occurred on the left side, 6 on the right, and 2 near the mid-line. Of the 20 transverse ruptures, 13 occurred on the anterior wall and 7 on the posterior. In the presence of a dystocia, especially in the generally contracted pelvis of moderate grade, as the lower zone becomes thinner and thinner, and more and more distended, the lower portion of the cervix tends to become imprisoned between the fetal head and the pelvic brim. At the same time the contraction ring assumes a high level, and acts as the upper fixed point. The lower zone finally has to give way, if relief is not at hand. The symptoms are: (a) Premonitory; (b) the signs of shock and hemorrhage, with or without the development of sepsis. The child only escapes into the peritoneal cavity in about 15 per cent. of cases. Of the 46 patients treated in the hospital, there were three with rupture at the uterovaginal junction. Such ruptures are seen most frequently as the result of transverse presentations, and of trauma due to faulty instrumentation. The posterior vaginal vault is injured more frequently than the anterior. The spontaneous ruptures are due to a tremendous distention and stretching of either anterior or posterior vaginal vault. The pelvic contraction is usually of high grade.

Incomplete ruptures of the uterus may be either spontaneous or traumatic, and either vertical or transverse. The common traumatic causes are *accouchement forcé*, forceps, version, extraction of the after-coming head, and embryotomy. Rapid

dilatation in placenta prævia centralis gave the greatest number of ruptures of this type. The spontaneous ruptures usually depend on old scar tissue in the cervix or vaginal fornices.

The maternal mortality in the list of 78 cases was 53.8 per cent.; the fetal mortality was 70 per cent.

The treatment of incomplete ruptures consists of tamponage alone or with sutures; rarely laparotomy. Treatment of vaginal vault ruptures comprises tamponage or laparotomy, with suture of laceration, rarely hysterectomy. In complete ruptures, if the child is free in the peritoneal cavity, an abdominal section should be performed. If the child is still in the uterus, and the tear is a bad one, the woman should be delivered at once, by using tamponage or doing hysterectomy on the spot. The patient should not be moved. If the child is still in the uterus, and the tear is not a bad one, it will be best to move the patient to hospital before delivering. When the diagnosis is first made, after delivery of the child, tamponage may be relied on, if the patient is in good condition. A laparotomy is useless in the presence of severe shock.

DISCUSSION

DR. E. GUSTAV ZINKE, Cincinnati: Rupture of the uterus from purely obstetric causes should not occur in the hands of any one who knows obstetrics. I am referring now to rupture of the uterus, due to delayed labor, the result of an obstruction which is encountered in the passage of the child, and such ruptures should be wiped from the records. Knowing the doctrine of narrow pelves, as we understand it now, no man has a right to carry a patient to the verge of rupture of the uterus, as the clinical picture which brings the threatening danger is so clear that no man can possibly overlook it. The man who has taken the history of his case and studied his patient carefully will know in advance whether he has trouble to look for or not, and he will be on his guard and look for the symptoms indicative of rupture.

DR. EDWARD J. ILL, Newark, N. J.: I want to speak of rupture of the uterus, which is produced by the application of forceps high up, in a case of non-retracted cervix. Let us make a difference between the two. A dilated cervix does not mean a retracted cervix. The forceps, as a rule, should not be put on the fetus until the cervix is retracted. This is an old rule, and is little followed.

DR. R. W. LOBENSTINE, New York: I agree with Dr. Ill. The application of the forceps high up is responsible for a large amount of damage.

Calcareous Degeneration of the Fibroid Uterus

DR. WALTER B. DORSETT, St. Louis, read a paper on this subject and presented the specimen:

On opening the abdomen the tumor was found lying loosely in the pelvis and unattached. On grasping the mass I was reminded of the sensation usually imparted in the handling of uterine fibroids with a long pedicle. A supravaginal amputation was done, and the abdomen closed within a few minutes. The patient made an uninterrupted recovery and left the hospital within eighteen days, well, and relieved of her distressing symptoms. The ligation of the renal artery of the rabbit by Litten and his subsequent discovery of deposition of calcium salts in the renal tubules, probably proves that the true etiology of calcareous deposits lies in a retrograde process due to deficiency of blood supply. It can be readily seen that during the normal atrophic changes in the uterus, due to decreased determination of blood toward the uterus, degenerative changes are apt to occur.

DISCUSSION

DR. J. HENRY CARSTENS, Detroit: Thirty or more years ago a woman came to the dispensary with fibroid tumors. At that time we did not operate on these tumors so frequently as we do to-day. She was not operated on then. About five years ago she presented herself with three tumors which were jammed in the pelvis, causing obstruction of the bowels and bladder. I operated on her, removing one tumor about six inches long, and four inches in diameter. These tumors were so hard that I could not cut them open, but had to split them with a hatchet to show the calcareous deposits. No matter how long these cases are allowed to go, these tumors will either undergo calcareous degeneration or become malignant, so on general principles all fibroid tumors ought to be removed.

DR. HUGO O. PANTZER, Indianapolis, reported a case which was similar in every respect to the one related by the author of the paper.

Ovarian Pregnancy at Term

DR. WALTER C. G. KIRCHNER, St. Louis: The clinical symptoms were those associated with tubal pregnancy. At a later stage the patient had the usual symptoms attending uterine pregnancy at term. The tumor mass originated in the right ovarian region, and as pregnancy advanced the tumor was pushed toward the left side. The patient felt fetal movements about the fifth month of pregnancy. The condition was complicated by prolapse of the uterus with pronounced edema of the cervix. The patient consented to operation, and in doing a laparotomy a cyst-like tumor was delivered through the abdominal opening. The mass resembled an ovarian cyst, and contained the fetus. This was found to be full term and well developed. It was easily resuscitated and is in good health. The tumor mass was complicated by omental and intestinal adhesions. The appendix was adherent and appendectomy performed. The left tube was free. The right tube was incorporated with the outer surface of the gestation sac. The ovarian ligament was connected with the gestation sac. The sac originated in the right ovarian region, where a broad pedicle had formed which was ligated and severed. In this region also the main blood supply was obtained. The gestation sac contained the placenta and fetal membranes. The placenta was not associated with either tube and was free in the abdominal cavity. It occupied a central and anterior position in the gestation sac. The diagnosis of ovarian pregnancy was based on the presence of the utero-ovarian ligament, the normal condition of both tubes, the location of the tumor, and the microscopic evidence of the examination of the gestation sac. Mother and child are living and in good health.

DISCUSSION

DR. E. GUSTAV ZINKE, Cincinnati: Ovarian pregnancy is a very rare thing, and I am glad we have brought before us a case which leaves no doubt in our mind as to its real character. It is remarkable what Nature will not do under these circumstances when the ovum is implanted ectopically. The most frequent cases of ectopic gestation which go to full term are those in which the tube holds out to the last. It is comparatively rare, it is true, but these are the cases in which there are no adhesions between the abdominal viscera and the ectopic gestation sac. The next in frequency is the ovarian, but here very often rupture takes place because of the brittle character of the ovarian tissue. There is another variety of ectopic gestation which goes to term, but which is the rarest of them all, and that is, in cases of tubal rupture, or in tubo-ovarian pregnancy rutpure takes place sufficiently to permit the amniotic sac, with the decidua reflexa, which is formed under these circumstances to escape into the abdominal cavity. Here the placenta continues to grow within the tube or ovary, as the case may be. Sometimes it makes its way outside of the structures and implants itself on the pelvic wall. Occasionally it happens that the membranes are broken because of the movements of the fetus, and then the fetus is found free in the abdominal cavity.

DR. ERNST JONAS, St. Louis: I recall a patient operated on by Dr. Tuholske when I was assisting him, in whom in the second month of pregnancy the entire ovum was swept away from its seat of implantation in the right tube, into the free abdominal cavity, implanted itself in the region of the liver, changed the liver tissue, the peritoneum covering the kidney, and parietal peritoneum to such a degree that it was able to change these tissues to true decidual tissue. The pregnancy went on to term and the child was removed at the end of pregnancy alive. The mother died twelve hours after the operation. We did not know at the time why she died. The specimen which we have in our possession shows that it would have been impossible to have removed the placenta by force from these organs.

DR. A. B. MILLER, Syracuse, N. Y.: In the pathologic museum of the college in Syracuse a specimen has been re-

cently placed of an ovary which contains an ovum perhaps of two months' development. The patient was operated on by a neighboring surgeon, he supposing he was simply dealing with an ovarian cyst. The patient had been complaining of more or less pain, and on examination a small globular mass was found in the pelvis. Without taking the history of the patient as to the possibility of this being a pregnancy, the woman was operated on, the ovary removed, and found to contain this small embryo.

(To be continued)

MICHIGAN STATE MEDICAL SOCIETY

Forty-fourth Annual Meeting, held at Kalamazoo, Sept. 15-16, 1909

(Concluded from page 1123)

The Physician and the Antituberculosis Campaign

DR. A. S. WARTHIN, Ann Arbor: This paper treats of the changing attitude of laymen toward medicine, of the popular demand for preventive medicine, and of the increased knowledge of the laymen concerning matters once supposed to be the property of the physician. As a result of this change, the profession of medicine is also undergoing an evolution from a science and an art professing to cure, to a science of prevention of disease. The physician of the present day must meet this changed attitude. His duties become no longer those relating to his immediate patients; but he must concern himself with the broader questions of public health and the fight against preventable diseases. In modern health board work, in school inspection, in antituberculosis work, in the fight against venereal diseases, the physician finds a legitimate field for activity. The increasing medical knowledge among the people at large demands that the physician lead these movements in the prevention and extermination of diseases. There is a growing tendency for people to consult physicians as to the state of their health and what things should be avoided or prevented. The physician must meet this new conception of medical practice or fall behind. In the fight against tuberculosis he must especially take a leading and important part.

Diagnostic Value of the Hemolytic Tests in Cancer and Tuberculosis

DR. FRANK SMITHIES, Ann Arbor: This work comprises observations on 158 individuals affected with various ailments, and clinically well. Apart from the cancer cases, particular interest is attached to the findings in the cases of tuberculosis, syphilis, the anemias and the diseases associated with anemia. In the clinical diagnosis, of 31 cases of malignant disease, there were 14 positive, 10 negative, 4 reverse and 3 undetermined. Of 3 cases of benign tumor, the results are, 0 positive, 3 negative, 0 reverse, 0 undetermined. Of 45 cases of tuberculosis, there were 2 positive, 27 negative, 5 reverse and 11 undetermined. Of 19 cases of syphilis, there were 4 positive, 11 negative, 0 reverse and 4 undetermined. Of other diseases, there were 36 cases, 5 positive, 20 negative, 2 reverse and 9 undetermined. Of normals, there were 24 cases, 1 positive, 23 negative, 0 reverse, and 0 undetermined. While the main mass of data is at present for any single class of disease, yet the large number of cancer cases showing this reaction should urge us to seek modifications of the method in the hope that study of various sera along other lines will lead to the firm establishment of a specific reaction for cancer and other diseased conditions which seem to have specific pathology.

DISCUSSION

DR. VICTOR C. VAUGHAN, Ann Arbor: This work on hemolysis and the use of hemolytic tests stands on a very uncertain foundation. Work has been done recently in Wassermann's own laboratory which seems to show conclusively that the hemolytic test is due to the presence of a ferment, and all this talk about amboceptors, complements, etc., is dependent on the acidity or alkalinity of the reaction. He is somewhat uncertain about the outcome. We know a great many more things about cancer than we knew years ago, and the medical profession is making some progress, and I think we may reasonably hope that the time will come when cancer will be cured not by any serum, or by any injection, or anything of that kind, but when we may reasonably expect that after operable cancer has been removed by the knife, a return of it may be prevented.

DR. HUGO A. FREUND, Detroit: The subject of hemolysis interested me a number of years ago in the direction of the presence of hemolysis in pernicious anemia. At that time I determined the hemolysins in the urine of individuals with that disease. One of the first things was their persistence; at times they appeared one day and were absent the next. In going over the work one fact struck me, and that was there is no uniform method of estimating the hemolysins. The method suggested by Crile is open to many criticisms. The one of Richard Weil, which appeared later, is as good a test as can be used. The results not only vary in accordance with the tests used, but the personal factor has much to do with the study. I am surprised at Dr. Smithies' results in tuberculosis cases, as other reports are contrary to his findings, especially the recent reports of Ottenberg of New York, who finds a degree of hemolysis in cases of advanced tuberculosis. There seems to be some relationship between agglutinins and hemolysins.

DR. F. SMITHIES, Ann Arbor: My method in general was that of Weil. I have tried the Eppstein method, and the method suggested by Crile frequently as controls. Weil's method seems more reliable. With regard to the relation of hemolysins to agglutinins, practically I know little about the subject other than what I have read and work which I have done. Perhaps my list of reverse hemolysis was rather small because I had very few late cases of tuberculosis. In the moderately advanced cases, the degree of reverse hemolysis was more marked than in the localized infections. These cases were associated with anemia, fever and cachexia.

Landmarks in the Diagnosis of Incipient Tuberculosis

DR. ELMER F. OTIS, Battle Creek: The signs and symptoms that are not positively diagnostic are the family history, the cough, expectoration, night sweats, the diaphragmatic excursions and the so-called phthisical chest. The uncertain factors that are perhaps given undue importance are dull areas on percussion, cavernous resonance, hectic flushings, one or two negative sputum examinations, *x*-ray examinations, history of excesses in vital and procreative functions or the various vices. The findings that must determine the real diagnosis are the demonstration of tubercle bacilli in the feces and sputum and a possible early hemorrhage. Spasmodic fluctuations in vasomotor phenomena or bodily temperature. History of failing health, with loss of weight and appetite; a rapid and irritable heart even when the patient is at rest. Anemia without leucocytosis, but a strong tendency to blood dyscrasia, such as hemorrhages, nose-bleed, disorders of menstruation and vasomotor disturbances. The eye and percutaneous tuberculin tests are of real, but debatable merit. Last, but not least, are auscultatory findings.

DR. T. M. KOON, Grand Rapids: The public is beginning to learn the importance of early diagnosis of tuberculosis. Physicians throughout the State of Michigan can render a great service along the lines of prevention of tuberculosis by diagnosing these cases earlier. Every man who is doing more or less special work along this line has occasion to see patients who are in the advanced stages of tuberculosis and who have been cared for by physicians for months without knowing they had this disease. Therefore, it is highly important that the profession should appreciate the fact that the public is going to call on them to make these early diagnoses. I would urge the importance of taking a careful history in all cases. During the last few years the profession has got away from the idea that heredity plays any part in tuberculosis, and the public has become educated to a certain extent along that line, but a great many of the leaders of the profession are getting back to the idea from personal observation that the children of tuberculous parents inherit a predisposition to that disease, and they are more likely sometimes during their lives to contract tuberculosis than the children of parents who are not tuberculous. I have diagnosed early a number of cases of tuberculosis with the skin test. It is easy to apply and is harmless. This test is being used by the leading men all over the world, and its findings are valuable, so that in all cases

in which our suspicions are aroused, and in which we do not find the tubercle bacilli in the sputum, we should resort to the tuberculin test before dismissing the patient.

DR. VICTOR C. VAUGHAN, JR., Ann Arbor: The taking of the family history is very important. In fact, in the diagnosis of incipient tuberculosis everything is important, and we must use every means in our power which will furnish any knowledge or information. The diagnosis of early tuberculosis is very important. Not infrequently other individuals in families in which there may be cases of tuberculosis come to us before they have any symptoms apparently of the disease. They may take cold easily, or they may feel a little run down, may have lost a little weight, or look a little pale. They have no cough, and they come to us to know whether they are in good health or not. In these cases a physical examination is practically negative, that is, it is very hard to detect any signs or symptoms. I believe the diagnosis of incipient tuberculosis can hardly ever be made unless the patient is watched carefully for a certain interval of time. More stress should be laid on slight rises in temperature, and on accelerated pulse. It is difficult to get these slight rises in temperature and of increased pulse, and for that reason it would be a good thing if these patients could go to hospitals, say for a period of three or four days for purposes of observation, and at the end of that time a positive diagnosis could probably be made. One of the most useful adjuncts is the use of tuberculin in the diagnosis of early cases. This may be administered subcutaneously, percutaneously, or in the eye. I prefer the ocular reaction. I cannot agree with Dr. Koon as to the reliability of the skin reaction; I have obtained it in control cases, and one may say the subjects are tuberculous, but they show no evidences of it. It is much easier to prove a patient to be tuberculous rather than non-tuberculous. In no case in which I have obtained a definite ocular reaction have I failed on observation to find undoubted evidences of tuberculosis in 250 cases. Of course, there are certain cases in which the eye reaction does not work, or no reaction is obtained.

DR. B. R. SHURLY, Detroit: The medical profession has great responsibility in the early detection of these cases. These patients are always with us. They are so numerous that it is almost astonishing to any one, who is working on this problem, to see how frequently we can demonstrate active signs of tuberculosis. There are certain definite lines of procedure in regard to the early diagnosis that I have found very helpful in elucidating some obscure or unusual lesions. It is important in examining the chest to have the clothing removed. Many practitioners in examinations of the chest do so through a little opening, and no endeavor whatever is made to reach the back which in my opinion is the all-important part in the diagnosis of this disease. I much prefer to have the percussion and auscultatory signs from the back than from the front of the chest. We know definitely where the lesions are more frequent, and these particular areas should be given more careful investigation. A routine examination should be made of the sputum. The newer tests are useful in detecting the early cases of the disease. The skin reaction in my opinion is of no value except in very early infancy, but the eye reaction is of considerable value in many doubtful cases. Observations should be carefully directed to the temperature. Examination of the throat and larynx offers considerable additional information as to the location of any possible lesions explaining early invasion in those regions.

DR. J. COLLINS JOHNSTON, Grand Rapids: We get our information from auscultation in these early cases; but we cannot make a diagnosis as a rule, with one examination. It is necessary to have these patients come to us from time to time, furnish them with thermometers, and have them take their temperatures every two hours for two or three days. I teach them to do this, and then we can get information about rises in temperature. The skin test is of inestimable value in a negative way.

DR. FRANK SMITHIES, Ann Arbor: If the eye reaction and skin reaction show the presence of a previously active tuberculosis, it does not necessarily mean consumption. There may be a tuberculous focus somewhere, and it is the physician's duty to find out where that focus is, and the only way to do so is by a thorough and careful physical examination. The tuberculin method of Koch is of more value in localizing infection and telling a patient he has consumption than any special reactions that may be mentioned.

DR. DONALD, Detroit: Has Dr. Shurly seen any unpleasant sequelæ from the ocular reaction?

DR. SHURLY: I have never seen any marked reaction in the way of a purulent discharge from the eye.

Urinary Infections; Treatment by Inoculations

DR. W. T. DODGE, Big Rapids: Vaccine therapy has not been used extensively by many general practitioners because of the supposed necessity of regulating dosage by the opsonic index. In most cases the symptoms of the patient are a safe guide to the administration, and when the index is taken and does not correspond with the symptoms, it is safer to be guided by the symptoms. In sixty cases, nearly all of urinary infection, all the patients were treated with vaccines without index. Many cases were of several years' duration, in which the urine contained large quantities of pus, and which had resisted all local and general treatment. There were of *Bacillus coli communis* infection, 41 cases; mixed *B. coli communis* and *B. pyocyaneus*, 4 cases; mixed *B. coli* and streptococci, 1 case; mixed *B. coli* and micrococci, 3 cases; *B. pyocyaneus*, 8 cases; streptococci, 1 case; *Staphylococcus pyogenes aureus*, 2 cases; *Staphylococcus pyogenes albus*, 1 case.

The work was all done at the laboratory of Mercy Hospital, but the patients were under the charge of several different physicians, and the period extended from February to September, 1909. Twenty-three patients have been cured; 37 are still under treatment, the germs still existing in urine, but in every patient under treatment more than thirty days' symptomatic cure has taken place. A few of the patients had no pus in the urine, but had indication of infection at other places in the body. Many cultures of the urine have been made in cases of known infection in which the urine was normal chemically and microscopically, and in every instance the germs causing the infection have been obtained from the urine. This I consider a valuable diagnostic point in infectious diseases and one that should be followed up by other observers. Two cases of acute infection were treated, one of the colon bacillus, the other of the streptococcus, with highly satisfactory results.

Mind Cures in General and the Emmanuel Movement in Particular

DR. ARCHIBALD CHURCH, Chicago: Mind healing or psychotherapy is older than the story of the Garden of Eden; it is contemporaneous with the Garden itself. In olden times, the priest and physician were one and the same. Whether it was the priest of Apollo or the followers of Æsculapius, or as the medicine man in Dakota, medicine and religion went hand in hand. The influence of the mind as affecting the human body for better or worse has been known ever since men have congregated, and the influences which have dominated one and another sort of mind cure have been identical since the beginning of the world, and these influences have been exercised along rather definite plans to the attainment of a single end. That is to say, in all schemes of mind cure, whether it be scientific psychotherapy, hypnotism or the iterative vagaries of Christian science, they have all been exercised in two ways: the one establishing expectancy of improvement by the incubative method, the other by asserting better, helpful, hopeful and healthful things by the method of iteration or continued suggestion. This process of expectancy, waiting for something and earnestly anticipating benefit, is commonly described as the incubative, like the hen sitting on the egg, lives in hopes, and the sick individual always hopes and continues to hope. It is the keynote of all forms of mind healing, of all forms of psychotherapy—hope, eternal hope. The other plan is to have those who feel sure of their ground, or who are convinced that certain plans are beneficial, to insist constantly on these facts. By this iteration, the groove of health is established. In this suggestive purpose you will see that it is the element of hopeful expectancy which is the key to the situation, and it dominates the music and paints the scene and tempers the entire atmosphere. New England has given us

Christian science, which has largely for its purpose the alleviation and cure of disease. It has cured disease and will continue to cure disease so long as people adopt a hopeful expectancy toward that end. This is not saying that Christian science cures organic disease. Christian scientists do not admit that they can cure cancer or broken bones or that inflammatory processes or infections are modified by this hopeful expectancy to any considerable extent. Undoubtedly, many vagaries of feeling and worries of the flesh are benefited by Christian science.

Those of us who live in Chicago have seen the rise and fall of what has been called Dowieism. Any conception which you may entertain of Dowie as a faker or a grafter, or a mere money-getter, is absolutely besides the mark. Dowie believed he was the inspired agent of the Almighty. He believed that to him were vouchsafed messages from the archangels. He was deluded. He was convinced that what he did was under divine direction, and that those who opposed him were animated by the devil. He was sincere. Had he not been sincere the movement which he fostered and built up would have fallen away promptly, but it was his own conviction, his own righteousness and power, that enabled him to gather about him such men as made up the leaders of his church. When in the latter stages of mental disease he became absolutely irrational and thought he saw the King of England coming in a ship bringing him an immense fortune, then his followers were willing to see his insanity. Every year of his life had been the natural result of a deluded mind.

Of two physicians of equal intellectual attainments, the man of buoyant character and helpful disposition and encouraging nature, is the better physician, and his results will be better and his opportunities for doing good will be greater because he inspires this mind cure unconsciously, he inspires this hopeful anticipation of improvement. The physician should understand the forces with which he works and the obstacles he meets and the means at his disposal to get the best results by the application of mind treatment in his daily routine. Pleasant thoughts mean good circulation and good circulation means better nutrition.

The Emmanuel movement had its inception in a party of social-service workers. Dr. Worcester had his attention called to the fact that many people did not know about consumption and could not only not benefit themselves, but did not know how to check the spread of the disease. The social workers were organized to get the people out of doors. They induced consumptives to sleep in tents or on porches or in back yards. It was a fine thing, but it was not appreciated. Dr. Worcester saw the Christian science churches building and increasing all over the land, and he may have taken a tip from that cult. The other regular Protestant denominations were decreasing in attendance. But Dr. Worcester saw the defects of Chistian science. People worry. They have a lack of self-control. They are addicted to vice. These people he got together in small classes and their self-control was stimulated by pointing out the need for it. There was a moral element in it. The neurasthenics were added later. These people had fears of insanity or fears of general nervous breakdown. He insisted that they be examined by a regular physician to make sure that there were no organic defects, and that the cases were such as he might reasonably hope to benefit. The church is in a transitional stage. I do not know how, or why, or whither the trend, but these are the facts, and these people who are now seeking help in the Emmanuel movement in a few years will have tired of it and the church will have lost in grace in the meanwhile, and it will have turned itself into a sort of free clinic, so that its dignity will be broken and its prospects for doing good greatly diminished. Moreover, I very much doubt whether clergymen, by training and temperament or by experience, are admirably qualified to deal with medical subjects. The essential requirements for the clergyman is to have belief, to have faith; in other words, to be credulous, and credulity and good judgment are not necessarily interchangeable. Clergymen are good men. They are honest men. They are helpful men. They are hopeful, they are credulous, and therein lies the weakness in the work of this sort conducted by them. Mental treatment or psychotherapy should be based on modern psychology. It admits intelligent application of its methods in order to secure the normal mental action which shall be manifest in normal physical control, and above all things it depends in these nervous and mental cases in the establishment of hopeful expectancy. The successful psychotherapist is born. If the physician does not feel sure of himself he can never administer psychotherapy with any considerable success. The whole thing may be summed up in establishing hopeful expectancy, and I am devoutly thankful to the man who has scattered broadcast through this land the placard that says, "Keep Smiling."

Transitory Insanity and Its Basis

DR. CHARLES W. HITCHCOCK, Detroit: This paper has, first, to do with the transitory insanities pleaded as a defense in criminal cases rather than with *bona fide* transitory insanity as laid down by the text-books. Second, transitory insanity is of rare, not to say, doubtful occurrence. Third, more frequent than its *bona fide* occurrence is its allegation solely as a means to the end of avoiding just responsibility for crime. Fourth, its most frequently pleaded varieties, transitory frenzy, transitory mania, emotional insanity, have but little standing among the best psychiatrists. Fifth, epileptic excitement and confusion, while admitted to occur, is often without adequate basis pleaded as a cover for crime. Sixth, it is unworthy of the expert, unable to make and define clean-cut diagnoses in these cases, to inject vague claims of insanity into such cases for the purpose of creating such doubt as will befog a jury. Seventh, medical experts should be careful to prove themselves anxious to conserve rather than to defeat the law. Eighth, the medical expert should approach such cases with an absolutely unbiased mind, reach his conclusions scientifically, take a clean-cut and firm position, and maintain it with the courage of his convictions. Ninth, if, with the crime eliminated, the case presents no adequate evidences to warrant a diagnosis of insanity, such a diagnosis should not be made, for the crime may not be of itself sole evidence to warrant such a diagnosis. Tenth, the expert, especially in cases in which transitory insanity is alleged, should zealously guard against being a party to the further increase of the disrepute into which medical expert testimony and insanity as an easy defense of crime have already come.

The Urgent Need of Operating in All Cases of Hernia

DR. E. B. SMITH, Detroit: There is urgent need of operating in all cases of hernia, but in this paper I restrict myself to the more frequent forms, namely, those of the abdominal and pelvic regions. Not all cases of reducible hernia are free from adhesions or local pathologic conditions other than the hernial opening. Adhesions around the ring are numerous. The local conditions may vary to a marked degree. The hernial opening may be small, tight, irritable, predisposing the sac to a partial or complete strangulation when forced through the opening, or the opening may be large and may be increased by the force of the additional abdominal contents pushing its way through. The glands adjacent become hypertrophied and adherent from the continued irritation of hernia. We must warn the patient that he should be on the lookout for certain symptoms which are pathognomonic of strangulation, yet there is danger of strangulation not being recognized even by the medical attendant, as there may be no sudden onset, no characteristic local pain, no nausea, no vomiting and no tenderness, but there may be expulsion of gas or even a fecal evacuation. The local complications may be such as to require a resection of portions of the omentum which increases the mortality, and very often we are forced to do a resection of the intestine which brings a high mortality. In uncomplicated cases, when the surgeon and the patient have been prepared, the percentage of recoveries should be from 98 to 100 per cent. An important factor in the early operation for hernia is the opportunity given both the surgeon and the patient for preparation. Knowing that the hernia increases in size, the complications in number and seriousness, and that a grave, if not fatal condition, must be the result, and knowing the necessity of proper preparation, why should we delay a comparatively simple operation for one of greater magnitude?

DR. CONRAD GEORGE, JR., Ann Arbor: Intestinal resection comes up in connection with hernia, and I think as our methods of aseptic resection are perfected, the mortality will come down a little.

DR. F. W. ROBBINS, Detroit: I think the profession is negligent in allowing patients with hernia to pass through their offices without strongly advising operation. Two years ago, in my service at St. Mary's Hospital, I saw three patients with hernia die simply because they were neglected. One of these was a patient who had had hernia for twenty years. He thought he could keep it back with a truss. Sometimes he did, sometimes he did not. He came to the hospital and he thought the hernia could be reduced, and that he would not have to submit to an operation. A few days later, when the man was *in extremis*, I operated on him and found some 10 feet of rotten gut, and the belly filled with a bloody, purulent secretion; the man died on the table. Within two weeks of that time I had two other hernia patients. One was a woman, with a large abdominal hernia, the other a man with a small strangulated hernia that had ulcerated through into the intestine; he died. These were poor people; they were sent to the hospital as a last resort, and a hopeless operation was undertaken. The deaths of these patients were not due to the conditions after they were admitted to the hospital, but to conditions that might have been prevented had they subjected themselves to an earlier operation. Since that time I have felt it my duty, when a patient comes into the office with a hernia, and wearing a truss, to urge operation, in consideration of the small percentage of mortality from operations conducted at the proper time.

DR. BAYARD HOLMES, Chicago: I feel that if an operation will cure a hernia quickly and permanently, it ought to be done at once. The skill with which the operation is done has a great deal to do with the permanancy of the operation. When I first saw hernias operated on, the operations were frequently made in such a way as to allow the wound to close by granulation, hoping in this way to get a more permanent recovery. Since antiseptic methods have been applied to hernia, to every other surgical operation, and when they have been wisely managed, these hernias, so fas as I know, have been permanently cured. Of course, there are recurrences, especially when trusses have been worn a long time, and the abdominal wall has an enormous defect. The recurrences under these circumstances are worse possibly than the original hernia. The time to operate on a hernia is when it has begun, and when the abdominal wall has the full amount of strength, which it does have before a truss has been worn.

DR. WILLIAM K. WEST, Calumet: I think in these cases of abdominal section, when the involvement is large, when there has been free drainage on account of infection of the wound, when the abdominal walls are much weakened, and postoperative hernia likely to result, then it is wise on the part of the surgeon, before the patient leaves the hospital and as soon as the discharge has ceased, to prepare the wound; that is, open up the peritoneum, dissect free the fascia, unite the fascial layer, thereby adding strength to the abdominal wall, and guarding against a possible postoperative hernia.

Acute Postoperative Dilatation of the Stomach

DR. ALEXANDER W. BLAIN, Detroit: In this paper I draw the following conclusions: 1. The so-called acute dilatation of the stomach is a disease of the fore-gut, in which the upper portion of the duodenum as well as the stomach is involved. 2. We should be very cautious in entering the abdomen for ileus when the swelling is in the upper part of the abdomen, without first passing a lavage tube. 3. We should make an examination of the abdomen in all patients suffering from gas after operation, abdominal or otherwise, and not trust to the routine treatment without first making a diagnosis of the parts involved.

DISCUSSION

DR. B. R. CORBUS, Grand Rapids: I have had the opportunity of seeing two cases of postoperative acute dilatation of the stomach in the last few months. These cases were very much alike; both were referred to me by Dr. Campbell of Grand Rapids. In one case the dilatation occurred on the second day after an operation for the removal of a pus tube. The patient had a temperature of 101 F., but the attention of the physician was directed to the great distention of the abdomen. He suspected peritonitis. On examination it was found that the flanks were flat, and I was called. The woman had a pulse rate of 140, and seemed to be *in extremis*. The stomach was washed out; we got three pints of fluid, after which the pulse dropped. The next morning the temperature was normal and the woman was on the road to recovery. She had never vomited. The other case was a typical one of acute dilatation of the stomach of less severity. Many of these cases go undiagnosed, and maybe it is only after the attention of the physician is called to the subject that he diagnoses these cases correctly.

DR. CONRAD GEORGE, JR., Ann Arbor: I am interested in gastric lavage in this condition. According to Dr. Aaron, the use of smaller quantities of fluid should be advised in washing out the stomach in these cases. It is much safer to use a smaller than a larger quantity, the idea being to introduce a small quantity, and then the whole stomach can be emptied out. This is an important part in lavage of the stomach in cases of acute dilatation, as in using too large a quantity of fluid there is danger of overdistention of the stomach and possible injury to its musculature and death from that cause.

DR. BAYARD HOLMES, Chicago: There has been no account taken of the enormous quantity of fluid which appears so rapidly in these cases. This large quantity is either normally secreted by the wall of the stomach, and is ordinarily poured out into the small intestine, or else it is abnormal. The quantity seems to be so large that it can hardly be normal. I do not know what the normal amount is when the pylorus is obstructed, whether the stomach fills up with three or four quarts of fluid in two or more hours or not. But the cases I have seen have been marked by an enormous quantity of fluid going into the stomach at rather short intervals. You may empty it with a stomach tube, but in a few minutes, apparently, you have to empty the stomach again. My experience does not lead me to think that relieving the stomach in this way invariably cures acute dilatation. I remember one case in which, fourteen days after operation, I made a diagnosis of acute dilatation of the stomach. In this case an operation was done on the right kidney, and so far as I know was perfectly aseptic, but in spite of the fact that the stomach was emptied frequently of large quantities of fluid and an effort made to keep up the patient's fluids by enema and transfusion, the patient died after two or three days.

DR. FRANK B. WALKER, Detroit: In one case I had acute dilatation occurred at the close of an operation for shortening the round ligaments in a young woman who was otherwise in good condition. In preparing the parts preliminary to closure, the stomach pushed out through the incision; it was returned to its normal position, and the case ended satisfactorily, and otherwise there was no more difficulty than in any other case. It was a surprise to me, as it was the first case of the kind I had seen, and it occurred so soon after the operation.

DR. MORTIMER WILLSON, Port Huron: I have known of a number of cases of acute dilatation of the stomach after operation, and in the past, when I was engaged in general practice, I had a number of such cases after parturition, in that there was sudden distention of the stomach shortly after delivery. Contrary to those cases that have been reported, in the majority of my cases the dilatation of the stomach was not due to the accumulation of fluid, but to the formation of gas. In some there were enormous quantities of fluid. It has occurred to me that this dilatation is due to a defect in the nervous tone. In a number of cases there was an extraordinary amount of secretion, but the dilatation was due to gas.

DR. BLAIN: Dilatation of the stomach is a misnomer. It is a dilatation of the fore-gut, in which the pylorus plays no part, and most of the secretion comes from the upper portion of the duodenum rather than from the gastric glands. Dr. Walker's case is rather unique, and entirely different from others that have been reported, and it brings up one thing which I think is true, namely, that the etiology of these cases is different. Undoubtedly, this dilatation of the fore-gut has many etiologic factors. We have used too much fluid in wash-

ing out the stomach in the past. A half pint of saline solution or water, the use of bicarbonate of soda, or something of that sort, is much better than to use enormous quantities. No matter how much water is used, you cannot get it all out unless you lower the head of the patient and raise the pelvis, which is an important part in the treatment.

Subphrenic Abscess

DR. FRANK B. WALKER, Detroit: Subphrenic abscesses are observable clinically on both the right and left sides of the upper abdomen. The signs of subphrenic abscess are in the main those of suppuration elsewhere, varying according to the source and route of infection. The constitutional symptoms are pain and tenderness in the upper abdominal region, chills, fever, immobile swelling, leucocytosis, thirst, disturbed nutrition and dyspnea. The course of subphrenic abscess is that of a complication of some other abdominal infection. One or more fossæ are invaded. From statistics, it is plainly evident that operation offers by far the more favorable prognosis. This pathologic condition occurs more often than it is discovered.

Sarcoma of the Ulna

DR. H. E. RANDALL, Flint: The types of tumors of the long bones are the osteoma, fibromata, chondromata, sarcomata and rarely myelomata. Carcinoma is secondary. The cases in the older literature of cancer were metastatic hypernephroma. The other growths not included under tumors are osteophytes, hyperostosis, exostosis, due to irritation and myositis ossificans. Tuberculosis and syphilis must be excluded. Bone cyst is a degeneration of a pre-existing tumor in most cases. Some cysts are thought to represent the entire destruction of a sarcoma. Sarcomas differ greatly in malignancy. Even early amputation does not save some patients because of the early metastases in the lungs. Bloodgood, in over 100 cases of giant-celled sarcoma, found that no metastases had occurred. These patients had been treated by curetting, resection and amputation. Curetting may be all that is necessary. A mistake that has occurred is to diagnose a small-celled sarcoma for an inflammatory condition. Multiple myeloma is incurable. These cases are recognized by the *x*-rays when but one tumor is thought to be present or by finding the Bence-Jones bodies in the urine. Several examinations of the urine may be necessary to discover the reactions. The most malignant types of sarcoma are the spindle-celled and round-celled. In one of my cases the patient was cured by removal of the ulna. The ulnar nerve must not be injured. The functional result was satisfactory and the man was able to do all kinds of farm work. I am convinced that if an early diagnosis can be made, the radius, ulna, tibia or fibula can be removed and the patient escape the more mutilating operation of amputation. The diagnosis is to be made by snipping out a piece of the tumor which is submitted to the pathologist. T. W. Huntington found that the fibula would hypertrophy to such an extent as to become virtually as strong as the tibia, in a case of destruction of the shaft of tibia by osteomyelitis.

Hydronephrosis and Pus-Producing Infections of the Urinary Tract Complicating Pregnancy

DR. CLARA M. DAVIS, Lansing, Mich.: The patient in the case which I report was a multipara, aged 23, with a family history of tuberculosis. The important points are: 1. The family history of long-standing tuberculosis in the father, and abscesses and Bright's disease, with dropsy in the mother. 2. The importance of a correct history and the difficulty of getting it in this case, owing to the fact that the patient and family had settled on a diagnosis of miscarriage. 3. The relation of the traumatism to the disappearance of the hydronephrosis and the subsequent course of the case. 4. Psychotherapeutic treatment given by the mother with the coincident disappearance of pain, the sudden appearance at about this time of large quantities of pus in the urine, showing that cessation of pain was due, not to the mental treatment, but to the free drainage of pus, and illustrating how carefully cases should be scrutinized in which mental treatments are assigned as causes of relief of pain or cure of disease. 5. The importance for diagnosis of a microscopic examination of the urine in all cases of severe abdominal or pelvic pain in pregnant women. 6. Absence of bladder involvement throughout. 7. Benign course in the absence of any but the simplest treatment. 8. Normal character of the labor which occurred at full term, and the prompt convalescence.

Uterine Fibroids; with Report of Eighty-six Cases

DR. RICHARD R. SMITH, Grand Rapids: The general purpose of the paper is to call attention to the seriousness of the disease, because of its complications, and the necessity for more radical ideas in regard to its treatment. In over half of the cases reported life or health were seriously threatened. Complications which may arise, first, from the distortion and pressure caused by increase in size; second, from the inflammatory degenerative or malignant changes which may take place within the tumor itself; third, from the external inflammatory complications, causing adhesions, abscess, etc., outside of the uterus. Hysterectomy is to be preferred to myomectomy in women who have borne children and who are approaching the menopause; or when the growths involve the uterus to such an extent as to make the leaving it a menace to good health or life. Myomectomy should be restricted generally to the simpler cases.

Other Papers Read

"Management of Placenta Prævia," by Dr. E. T. Abrams, Dollar Bay; "The Internal Secretion of the Ovary; Its Application in the Treatment of Disturbances of Artificial and Physiologic Menopause," by Dr. W. H. Morley, Detroit; "Practical Application of Physiotherapy in Gynecology and Obstetrics," by Dr. J. H. Kellogg, Battle Creek; "Cervical Rib," by Dr. Alexander M. Campbell, Grand Rapids; "Experiments in Intestinal Anastomosis," by Dr. Conrad George, Jr., Ann Arbor; "Vincent's Angina," by Dr. M. L. Holm, Lansing; "Prognosis in Cardiac Insufficiencies," by Dr. Hugo A. Freund, Detroit; "Major Amputations," by Dr. Ralph H. Spencer, Grand Rapids.

SIXTEENTH INTERNATIONAL MEDICAL CONGRESS

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Disturbances of the Internal Secretions Clinically Considered

DR. OLIVER T. OSBORNE, New Haven, Conn.: Gigantism is a condition due to hypersecretion of the pituitary, and acromegaly is a condition primarily of hypersecretion, later hypersecretion of the hypophysisis cerebri. The thyroid may not only hypersecrete and hyposecrete, but the component parts of the secretion of the thyroid gland may vary in amount and in chemical constituency and cause various clinical manifestations. These symptoms and signs vary in all degrees and tendency from exophthalmic goiter on the one hand to myxedema and cretinism on the other. Insufficiency of parathyroid secretion causes tetany. A disturbed secretion of the parathyroids may cause paralysis agitans. Hypertension may be due to hypersecretion of the suprarenals. Continuous low blood pressure and neurasthenic conditions may be due to hyposecretion of the suprarenals. Continuous low blood pressure and neurasthenic conditions may be due to hyposcretion of the suprarenals. Surgical shock after abdominal operations may be due to the inhibition of suprarenal excretion. Many of the disturbing symptoms of menstruation are due to ovarian insufficiency or to increased ovarian activity, and it is doubtless probable that many nervous symptoms in women are due to ovarian disturbances. Uterine hemorrhage, profuse menstruation, and other uterine bleedings may often be stopped by the administration of mammary gland substance.

Obesity

PROF. CARL V. NOORDEN, Vienna: In the most common forms the condition is due either to over-feeding or lack of exercise, frequently these two factors are combined. It is easy to understand why excessive corpulence follows these two factors. It is much more difficult to explain those cases in which, although the proper amount of food is taken and sufficient exercise is indulged in, obesity develops. This has been termed constitutional obesity. After discussions which have been pro-

longed for years and after careful investigations the conclusion has now been arrived at that in such cases the oxidation power of the organism has become weakened. This is a factor which bears a direct relationship with the thyroid gland. Temporary changes in that gland raise or depress the power of oxidation. The various forms of constitutional obesity may be classified as follows: (a) primary thyreogenic obesity, dependent on actual changes in the thyroid such as atrophy, degeneration, functional weakness, and so on; (b) secondary thyreogenic obesity, that is to say, functional anomalies of the thyroid on the action of other organs, such as the pancreas, hypophysis cerebri, suprarenals, thymus, pineal gland, and perhaps other organs also, so-called chemical correlations by means of internal secretions. These questions have not only a theoretical interest but possess important bearings on therapeutics, as anomalies of metabolism known under the term of obesity can only be treated rightly, when in any given instance, the origin of these anomalies has been correctly recognized.

Polycythemia

DR. H. SENATOR, Berlin: An increase in the number of red blood cells may be either relative or absolute and may occur under both physiologic and pathologic circumstances. Physiologic polycythemia is observed after the loss of much fluid from the body, after the ingestion of food rich in albumin, in convalescence from anemic disorders in new-born infants, after residence in a strange climate, and perhaps in hybernating animals during the winter months. Pathologic polycythemia is found when the blood becomes thickened during disease, in various forms of cyanosis, in certain intoxications and infections in which hemolysis takes place, and occasionally in diseases in which unknown changes in the blood occur, or in many affections of the nervous system. In all these pathologic circumstances, in addition to the relative polycythemia due to a thickening of the blood, the diminution of the tension of oxygen in the blood must be considered as a causal factor, whereby the hematopoëtic organs are stimulated to greater activity. These conditions must not be confused with polycythemia megalosplenica described by Vaquez, and polycythemia hypertamia described by Geisböch, in both of these a primary affection of the bone-marrow must be taken to be the cause of the polycythemia. Geisböch's disease, of which very few examples have been recorded, may be distinguished from that of Vaquez by the fact that in the former there is a high blood pressure together with hypertrophy of the heart, and enlargement of the spleen cannot be demonstrated. The changes in the blood, which have been more especially studied in Vaquez' diseases, consist in an increase in the viscosity of the blood, and a higher specific gravity. The resistance of the erythrocytes does not appear to differ from the normal, whilst the capacity for the absorption of oxygen lies within the usual limits, or is increased. The respiratory exchange in many cases is found to be high. With regard to treatment a vegetable diet and bleeding gives favorable results. Many cases of primary polycythemia cannot be placed under either of these categories.

Tuberculosis and the Community

DR. S. BERNHEIM and DR. L. DIEUPART, Paris, said that, speaking generally, all collective work and every kind of overcrowding favored the development of tuberculosis, especially when they occurred under conditions of faulty hygiene, as was the case in the pursuit of so many occupations. They alluded to the researches which they made among laundry workers, printers, compositors, and sugar-refiners, among whom they found an excessive proportion of tuberculosis. In the same way the staffs of hospitals are often affected. Lunatics, carpenters, floor-layers, policemen, workmen, railwaymen, inmates of penitentiaries, domestic servants, soldiers, and sailors, all pay a heavy penalty to the contagium of tuberculosis. The authors discussed the causes of this contagion which they have estimated by statistical returns for each calling. The remedy which they propose is a relentless attack on unhealthy workshops, dusty trades, insanitary and dark houses, the supervision of the sanitary surroundings of the "pretuberculous" child from his schooldays onward, and the complete abolition of insanitary barracks and workshops. But the struggle against tuberculosis will never be effective unless directed by competent and independent men with a wide mandate, a free hand, and full public powers for the performance of their work. Further, they must be assisted by the serious and persistent cooperation of all classes of society and trade or professional organizations. Tuberculosis is a disease due to misery and ignorance; it plays its worst havoc among the working classes, and it can only be banished from the community by the action of the community itself.

Treatment of Paralytic Deformities in Children

DR. ROBERT W. LOVETT, Boston: The subject of tendon transference in paralytic deformity has been thoroughly discussed and no routine discussion of the matter is needed. The varieties of paralytic deformity are seven: (1) Deformity due to simple gravity distortion; (2) deformity due to adaptive shortening and lengthening of soft parts; (3) deformity due to the contraction of non-paralyzed limbs; (4) distortion from weight-bearing on partly paralyzed limbs; (5) deformity of the trunk due to effort to secure equilibrium; (6) bony deformity following persistent malposition, and (7) dislocation. The importance of preventing paralytic deformity is important as deformity is in nearly all cases preventable. Supporting apparatus should be used from an early period for the purpose of preventing malpositions. Treatment is, first, mechanical, and secondly, operative, both supplemented by a third therapeutic measure, the development of the muscles by muscle-training, massage, and electricity. The possibilities of mechanical stretching are: (1) The stretching of contracted tissues; (2) the shortening of lengthened tissues, and (3) the influence of growth toward normal by properly fitting apparatus. The replies to a circular of enquiry sent out to the members of the American Orthopedic Association show that tendon transference is on the whole useful, and that periosteal insertion is preferable to insertion of tendon into tendon. The after-treatment is fully as important as the operative. The treatment of paralytic deformity should consist of a combination of the three methods; the operative should not overshadow the others, and the operation of tendon transplantation in properly selected cases is to be regarded as a useful and satisfactory one.

Infantile Malaria

DR. J. P. CARDAMATIS, Athens, Greece: Children at the breast are less attacked with malaria than at any other age, infants during the first year of their age enjoying a great comparative immunity. During the second year of life the liability to attack is not much increased, but between the ages of 2 and 7 years, and for some reason or other especially between the ages of 2 and 3, children are particularly subject to the poison of malaria. We are constantly led to believe the placenta to be furnished with antitoxic material which resists the development of the maternal hematozoa, destroying them at the surface of the placenta. Both among nurslings and little children there is great variation in susceptibility to malaria, the same natural immunity being met with as prevails among the indigenous inhabitants of tropical regions, though perhaps on a somewhat lower scale. Contrary to what has been affirmed by Plehn, the form of paludism which confers immunity does not always result in anemia. The natural immunity which has also been observed among children entirely differs from that relative immunity mentioned by Koch, which is due to a great frequency of infection during childhood. It differs also from that immunity which has been observed by Celli in the environs of Rome, and which is attributed to the periodical development and exhaustion of intensity of epidemics. Both the child and the adult in Greece are most frequently attacked with estivoautumnal malaria of the tertian type.

Cyclic Vomiting in Children

DR. J. COMBY, Paris, France: Periodic or cyclic vomiting occurs in attacks lasting two or more days with variable intervals; it is encountered between the ages of 2 and 6 or 8 years. It is seen a little more frequently in boys than in girls. Sometimes several members of the same family are attacked in turn. A neuroarthritic heredity is present in many cases. As pathologic conditions preceding the vomiting there may be

sore-throat, adenoids, dyspepsia, a tendency to vomit, enterocolitis, and appendicitis. This form of vomiting has been ascribed to the liver and fatty acid poisoning, acidosis, and acetonemia. If in fatal cases a fatty condition of the liver has been found it is very evident that it has not been primary but secondary to digestive troubles. It is necessary to look for lesions of the appendix. The symptoms consist of uncontrollable vomiting with rapid wasting, which suggests meningitis, peritonitis, internal strangulation, or appendicitis. Constipation, fever, and acetonuria are frequent. The prognosis is generally favorable, but at least ten fatal cases have been published. After having eliminated indigestion the ingestion of some poisonous substance, migraine, intestinal obstruction, and peritonitis the appendix should be examined by an operation. Medical treatment consists of the administration of alkalies, a vegetarian diet, hydrotherapy, and saline injection. Surgical treatment consists in appendicectomy in an interval.

Diagnosis and Treatment of Tumors within the Spinal Canal

PROF. H. OPPENHEIM, Berlin, read a paper on this subject in which he came to the following conclusions:

1. The differential diagnosis between tumors springing from the meninges and from the spinal column itself can scarcely be said to be established. 2. For the diagnosis between intramedullary and extramedullary new growths important but not absolutely trustworthy symptoms are existent. Of these the chief is the constancy of the upper level of the lesion. Nevertheless, the collection of cerebrospinal fluid above the tumor and the frequently accompanying meningitis serosa circumscripta may cause this level apparently to vary and thereby reduce its diagnostic value. For other reasons also the upper level may seem higher than it really is. Criteria for distinguishing between meningeal tumors and spinal gliosis are not trustworthy. 3. Serous spinal meningitis presents more of the characteristics of spinal tumors than any other extramedullary disease. The aids to differential diagnosis mentioned by Sir Victor Horsley cannot always be depended on. 4. Spinal medullary "pseudotumors" are to be considered with reserve. 5. The segmental diagnosis of spinal tumors may be complicated by the existence of secondary serous or fibrous meningitis. The symptoms of a tumor may be referable to a level below the site of the tumor. Therapeutic results are distinctly encouraging.

The Function of the Frontal Lobes

PROFESSOR BIANCHI, Naples: 1. For experimental work on the frontal lobes the only satisfactory animal is the ape, since in it these structures are well-developed and their architectural structure corresponds to that of the human cerebrum. The psychical activities of each ape must be carefully studied both before and after operation. 2. In front of the motor area (Rolandic) is an electrically excitable zone extending from the mesial margin of the hemisphere over the outer aspect to where that surface becomes continuous with the orbital surface. It is an integral part of the frontal lobe, and corresponds to the prefrontal fissure. From this area the muscles of the neck, eyes and ears can be stimulated. 3. The extirpation of the frontal lobes never produces permanent motor or sensory defects. Visual defects, similarly, are fugitive. 4. The whole intellectual life of the ape is altered after removal of the frontal lobes. Perception, attention, inhibition, and in particular memory and association, are enfeebled. The animal has no longer the power of profiting by experience. Sometimes stereotyped movements and tics are observed. 5. As a result its psychical tone is lowered; it lacks initiative, courage and spirit.

Pathology of Hereditary Diseases of the Nervous System

DR. B. SACHS, New York: The term "family diseases" is preferable to "hereditary diseases," since very few diseases are conveyed directly from parent to child, whereas the morbid tendency exists in one or both parents which leads to the development of a family disease. There is a marked difference between the cerebral and the spinal groups; the family; diseases of cerebral origin are due to changes in the highest nerve elements, viz., the ganglion cells; the spinal affections are due largely to disease of, or maldevelopment of, one or more systems of white fibers. The one exception to this group is the spinal form of progressive muscular atrophy, and that is only rarely inherited. Family diseases of cerebral origin include hereditary diplegia, hereditary optic nerve atrophy, and amaurotic family idiocy, the infantile form (Tay-Sachs) and the juvenile form (Spielmayer and Vogt). In both types of the latter disease the ganglion cells of the entire nervous system exhibit a marked swelling of the cell body and of the dendrites, while the axones remain intact. The active cytologic factor is an abnormal swelling of the hyaloplasm and not a degeneration of the fibrillæ. The occurrence of the disease among Hebrews only suggests that in the members of a race whose nervous system is prone to deterioration children are born with the highest nerve cells so defective that they are entirely unequal to perform the ordinary vital function, and at a very early day undergo a typical disintegration.

Nervous and Psychical Manifestations of Arteriosclerosis

PROFESSOR VON TSCHISCH, Dorpat, Russia: Arteriosclerotic neurasthenia is a common disease, especially between the ages of 50 and 55, characterized by anxiety and depression (in association with cardiac symptoms), insomnia, heaviness and numbness of the head, fatigability and incapacity for work. On the mental side it is distinguished by apathy, ill-humor, and irritability. From this stage the transition is a gradual one to arteriosclerotic dementia, in which the memory is greatly impaired, all psychical processes are slower, the patient becomes stupid, his opinions and judgments are mechanical and elementary, the imagination atrophies, and the will power diminishes. According to Dr. Cramer of Göttingen the nervous phenomena of arteriosclerosis precede the mental. The former usually consists in a triad of headache, giddiness, and defective memory, associated with, or followed by, transient pareses, slowing of speech, sluggish and unequal pupils, and paresthesia. Prominent among psychical symptoms is depression, sometimes also irritability and a paranoid symptom-complex.

Imbecility in Its Clinical and Medicolegal Aspect

DR. SOMMER, Giessen, Germany: 1. Idiots treated in institutions and the inmates of reformatory schools have many points of resemblance in bodily and mental characteristics. 2. It is therefore desirable that there should be a uniform method of investigating all such cases, and the further requirements for special groups may be easily met by a more extensive application of the special sections of the investigation schedule and by supplementary pages. 3. In studying congenital mental weakness as observed among the inmates of idiot institutions and reformatory schools a great many physiologic and psychophysical methods of examination might be usefully applied, in addition to those given in the investigation schedules, for the purpose of obtaining a better insight into the mental processes. 4. This improved system of classification is valuable both medically, psychologically, and educationally; it, moreover, leads to a better cooperation between the medical and educational authorities in general questions, as well as in respect to the special requirements of individual cases. 5. In the investigation of juvenile criminality it is to be remembered that some of the inmates of reformatory schools are obviously imbecile; when these are left out of consideration it will be found that the ordinary methods of investigation often fail, while, on the other hand, in individuals with apparently normal mental condition, more particularly as regards the intellectual faculties, there are apt to be hysterical and epileptoid manifestations as well as congenital moral defects. 6. Possession of the mental evidence of the existence of power requisite for comprehending the culpability of an act is a bad sign in a juvenile offender. 7. When juvenile offenders are of apparently normal mental capacity, the investigation respectively of their environment and of their inherited characteristics in connection with the study of family circumstances often leads to the recognition of the external or internal sources of criminality. 8. It is probable that analysis of the external and internal influences will more and more tend to show that juvenile crime both in its individual and in its social relations is to be regarded as a disease.

Imbecility in Its Clinical and Medicolegal Aspect

DR. W. WEYGANDT, Hamburg, Germany: There are only a few places in which lunacy practice takes cognizance of the ideal classification of anomalous mental conditions, the study of psychologic distinctions with appreciation of bodily peculiarities and special features in the progress of the cases, subsequently confirmed by the results of post-mortem examination. Nevertheless, in the least esteemed branch of psychologic medicine, the investigation of feeble-mindedness in children, science is continually advancing toward this ideal, inasmuch as it obtains increasing success in separating from the mass of complex phenomena a number of groups which exhibit features entitling them to be regarded as distinct clinical entities. The groups which at present are more or less sharply defined are amaurotic idiocy in members of a family, and imbecility associated (1) with abnormal states of the thyroid body, (2) with encephalitis (porencephaly, atrophic sclerosis, etc.) (3) with hydrocephalus, (4) with meningitis, (5) with the mongolian type of features, and (6) with epilepsy; to these must be added tuberculous sclerosis, dementia infantilis, dementia præcox, and the group due to embryonic inhibition of cerebral development. Besides these there are cases which can not yet be clinically differentiated into special classes, and which, more particularly in slight degrees of mental defect, cannot be precisely classified during life. Hysteria, neurasthenia, and melancholia are mental conditions deserving attention. In arriving at practical conclusions such as are required in judicial decisions and in questions connected with the administrative protection of imbeciles the first thing to be considered is the special nature of the defect, because the various groups exhibit varying degrees of unfitness for general society and also of capability for being influenced. The second and even more important point is the degree of the defect. For instance, epilepsy is of itself a disease of the greatest importance in connection with crime; in the worst cases, however, the patients are unfit to be at large. The severe cases are of minor importance from a medical point of view, whereas the mild ones devoid of special characteristics are practically far more important, and psychoneurotic cases are most important of all. The earlier we can recognize an individual as defective in a material degree and the earlier we can draw legitimate inferences as to the person's mental capacity and suitability for institutional treatment, the more positively can it be referred to a definite group in accordance with clinical and still more in accordance with bodily peculiarities. In estimating the degree of feeble-mindedness the intellectual level of the person's environment must be kept in mind, and the same precaution should be observed even in the case of law-breakers who have not incurred any suspicion of mental defect. In answering a question as to a person's capacity for forming an opinion the most practical course is to endeavor to compare the case with a normal child at a definite age-period; of course with due regard to any anomalies external to the intellectual sphere. The proper treatment of a criminal imbecile is a matter for physicians and sociologists.

Diagnosis and Treatment of Mediastinal Tumors

DR. A. CECCHERELLI, Parma, Italy: Mediastinal tumors are possible of diagnosis, but only by the use of all our modern methods, foremost among which we must put radioscopy. No means of investigation must be neglected because it is only on an accurate and positive diagnosis that the decision to perform a difficult and dangerous operation can properly be based, an operation which too often results in a speedy recurrence, the tumor or the infected glands not having been completely cleared away. Tumors of the anterior mediastinum are most promising to attack surgically when they spring from the bones, for the invasion of the mediastinum is only secondary. Surgical intervention is possible in tumors of the posterior mediastinum if the tumor is esophageal, for if it is limited to three centimeters in extent it can be resected and the cut ends of the esophagus brought together, while if it is more extensive the two ends can be brought up to the wall of the thorax or they can both be sutured and the lower end invaginated into the stomach, a gastrotomy being subsequently performed or a plastic operation on the esophagus can be performed. If the posterior mediastinum has to be reached it is better to do so by the transmediastinal route, and it is better to approach the tumor from the right side of the thorax especially if it is low down. A longitudinal incision is to be preferred, and a transverse one may be added to form a flap, resecting a certain number of ribs in order to allow the surgeon a better view of the field of operation.

Relief of the Eye Disease in Egypt

MR. A. F. MACCALLAN, M.B., B.C. (Camb.), F.R.C.S. (Eng.), chief inspector of ophthalmic hospitals in Egypt and late senior house surgeon and late chief clinical assistant at the Royal London Ophthalmic Hospital, Moorfields, read an interesting paper on this subject in which he considered mainly the incidence of blindness and trachoma. He divides the clinical variety of trachoma seen in Egypt into four stages based on the comparative prominence of the three features of the disease, granulations, papillary hypertrophy, and connective tissue formation. The universality of trachoma in Egypt is instanced by the high percentage of pupils in the government primary schools affected with the disease, 96 per cent. at one of them. According to the census of 1907, half a million persons were enumerated as blind in one or both eyes, this figure is probably a quarter of a million short of the actual number. Ophthalmic conditions have enormously improved in Egypt during the last twenty years, but no explanation has been offered for this phenomenon. The generosity of an Englishman enabled the Egyptian government to equip and maintain two traveling hospitals which were originally organized six years ago by MacCallan. In addition to these he has the direction of three permanent hospitals in different provinces recently built, or being built, partially by charitable effort and partly by the government. Mr. MacCallan travels from one to another of these five hospitals, of which he is director, and at which he gives clinical instruction to Egyptian surgeons who have obtained their diplomas at the government medical school. The surgical staff of all the hospitals is composed of surgeons thus trained.

Fibroids of the Uterus and Pregnancy

PROFESSOR S. POZZI pointed out that under the influence of pregnancy fibroids of the uterus may undergo an important series of modifications as regards size and position. It is generally taught that fibroids become enlarged during pregnancy, but this is very variable. In some cases these tumors undergo during pregnancy a rapid and remarkable increase in size. The enlargement of a fibroid tumor concurrently with pregnancy is usually due to edematous infiltration, but it may be caused by actual hypertrophy of the tumor elements which produce a more or less marked softening of the whole growth. In other cases aseptic necrosis takes place, but more often cystic degeneration occurs, while rarely suppuration and gangrene of the tumor are seen. During pregnancy there is a tendency for pelvic fibroids to rise up out of the pelvis, but at times this does not occur and in such cases there may be obstruction to delivery. In many cases, fibroids do not in any way interfere with the normal course of the gestation. Occasionally, however, acidents of considerable gravity occur. Among these are incarceration of the retroverted gravid uterus, especially likely to take place at the fourth month and very frequent with an intraligamentous fibroid. When the tumor either by its weight or its position exercises pressure on the walls of the bony pelvis pressure symptoms are liable to supervene. These may take the form of pain due to compression of the nerves, dysuria, retention of urine, albuminuria, pyelonephritis, constipation, or distention from pressure on the intestines. In some cases, attacks of pelvic peritonitis are set up and may require immediate operation. In rare instances torsion of the pedicle, or even of the whole uterus, may be encountered with acute symptoms simulating those seen in cases of torsion of the pedicle of an ovarian cyst. Further effects of the fibroid on the pregnancy are noted in the occasional occurrence of antepartum hemorrhage, abortion, death of the fetus, and its retention *in utero*. Diagnosis of a fibroid complicating pregnancy may be simple or difficult. Three conditions may arise: the medical attendant may be aware that his patient has a fibroid and may find evidence of the occurrence of pregnancy, or he may know nothing of the patient and may find a fibroid

with symptoms and physical signs indicating the presence of a pregnancy as well. In other cases, the signs of a pregnancy may be evident, but there may be others less certain pointing to the presence of fibroid. In such a case the diagnosis may present difficulties, and the condition is very likely to be regarded as one of extrauterine gestation. In the majority of patients the pregnancy runs its normal course, even when a fibroid is present and no interference of any kind is required. Any operative interference is only permissible during pregnancy when some grave complication supervenes, such as marked pressure symptoms, vomiting, severe pain, or peritonitis. In any case, even when it is certain that the presence of the fibroid will not permit of a natural confinement it is necessary to await the arrival of full term and then to perform Cesarean section. In cases in which the obstetrician is compelled to intervene in the course of the pregnancy the best treatment is to perform, whenever possible, myomectomy, either vaginal or abdominal. The induction of abortion or of premature labor are both contraindicated, and when myomectomy is not possible then the only alternative in these patients is hysterectomy.

Imbecility in its Clinical and Medicolegal Aspect

DR. FISCHER, Budapest, took for his subject that form of imbecility which has been described under the names of moral insanity or moral imbecility. The most important symptoms, he said, were the following ones: Lack of discretion, absolute incapacity for being influenced, strong propensity traceable even to childhood, lifelong instability and restlessness, aversion to useful employment, unsociableness, exaggerated self-esteem, excessive fancifulness, vanity, complete want of ethical ideas and impulses, absolute unconsciousness of justice and morality, and a great many signs of degeneration. Heredity had something to do with the development of these defects. Observations extending over many years had convinced Dr. Fischer that the ethical imperfections enumerated in this list and the criminal acts arising therefrom were the result of mental incapacity dating from the earliest period of life. In all individuals whom he had had the opportunity of observing from the age of 10 or 12 years to full maturity he found that the ethical shortcomings which rendered them useless as members of society showed no tendency to increase. He then described those forms of the disease which presented similar symptoms, and might therefore be confused with moral imbecility, called attention to the chief points serving to distinguish them, made some remarks on the prognosis, discussed the general question of how such cases should be dealt with, and devoted a few words to the subject of judicial decisions. He agreed with Songard that this form of mental abnormality—imbecility—presented certain features which were always similar and decidedly characteristic; as already mentioned, the features in question existed from the earliest period of life and showed no tendency to increase. On account of possessing these qualities the condition now described might be reckoned as one of the special or definite types of mental disease.

The Control of the Milk Supply in Large Towns

DR. M. BALLO, Budapest, said that the official examination of milk delivered for consumption in large towns is subject to extraordinary, often almost insuperable, difficulties. Since the composition—that is to say, the amount of valuable elements contained in it—is subject to great variation in natural milk, and since, according to most regulations, the composition of the weakest, that is, the milk that is poorest in such elements, is used as the foundation for the examination, it is obvious that a richer milk can be adulterated or diluted to a certain degree so as to appear as weak, yet not adulterated milk, and be thus offered for consumption. In any such case, it is only possible to decide whether the milk is naturally weak or is more or less adulterated with water by means of tests undertaken regularly at the farms, and this is impracticable for large towns which draw their milk from many and various sources, unless by means of control of all dairy farms and milk depots. But since such continual control would entail much expense, the question arises as to whether it would not be simpler and more effectual to prescribe as the minimum standard a richer average milk instead of the weakest natural milk as at present. The latter proceeding would appear the most suitable, for the purveyors of weak milk would certainly lose the trade in large towns if they were not in a position to provide a supply of rich milk, but the sanctioning of a possible watering of milk would be thereby avoided in the surest and simplest way.

Tuberculosis in Armies

DR. C. SFORZA, Rome: Tuberculosis, generally speaking, is diminishing in all armies. Its incidence is always more marked during the first years of soldiers in the ranks. In armies tuberculosis is generally an important disease, proceeding from the revival of old and latent foci existing at the time of admission to the service. In order to reduce the number of cases and of deaths from tuberculosis it is necessary to eliminate all tuberculous and predisposed subjects on entry to the army; to gradually improve the strength and the power of resisting fatigue of the recruits, especially those whose constitution is weak, and those who have a bad heredity; to avoid as far as possible the contraction of the disease by soldiers during their service, and to eliminate promptly all cases of tuberculosis which arise. Patients with the disease, whether curable or incurable, would have to be treated in civil or military sanatoriums at the expense of the state, because armies, while protecting soldiers from tuberculous infection, must not spread the disease among the civilian population. On leaving a sanatorium the patient could receive an annual or temporary indemnity, according to the degree of incapacity at the time.

Dementia Præcox and Military Service

DR. DRASTICH, Vienna: Great importance attaches to dementia præcox in military matters. For it occurs relatively often among the men and also in isolated cases among the younger officers. Since it often develops gradually, even imperceptibly, it is not infrequently overlooked in the early stages. It occasionally leads to various conflicts with discipline and military penal law, and, moreover, to occasional punishment or ill-treatment of those suffering from the disease, and at times it shows symptoms which may easily be mistaken for simulation. For these reasons it is important that not only military surgeons but also military judges should possess as exact a knowledge as possible of this form of psychic derangement, and especially that they should know the symptoms with which the disease is frequently marked at the beginning. Also the knowledge that dementia præcox often takes an intermittent course and has rather long intervals of quiescence is most important and essential in regard to anamnesia, for the assessment of the data relating to the history, and also for the claims of maintenance which come under consideration.

The Treatment of Amebic Dysentery with Special Reference to Appendicostomy

DR. JAMES M. ANDERS and DR. WILLIAM L. RODMAN, Philadelphia: The subject of the treatment of amebic dysentery, particularly in its bearings on surgical procedures, assumes importance in view of the utter helplessness of a certain proportion of cases which have been allowed to drag on until the patients no longer yield to medical treatment, and also because accessible statistics indicate clearly the widespread prevalence of the disease even in subtropical and temperate regions. The fact that an unsterilized water-supply is the principal source of infection deserves especial emphasis. The danger of eating green vegetables and fruits which have either been fertilized by the oriental method, i. e., with human excrement, or cleansed with contaminated water, must be recollected. In the treatment of the attack an important indication to be fulfilled is rest. Magnesium sulphate is recommended since it lessens the pain and tenesmus by removing the hardened fecal masses and inhibiting rather than exciting undue peristalsis. In the advanced stages of amebic dysentery and in cases manifesting highly acute invasion symptoms, purgatives may assume the rôle of aggravating causes. Ipecacuanha early gained popular favor only to fall from its enviable position with the passing of time. It was reintroduced by Sir Patrick Manson, who has expressed the belief that in this drug we have a remedy possessing specific virtues. In general, but not in-

variably, it exerts a markedly beneficial effect, causing the amebas to disappear rapidly from the dejecta. Much stress is placed on the improved mode of administration by means of "membroids" and salol-coated pills. We think it may be questioned whether chronic irrigation *per se,—i. e.*, without surgical intervention, has in its last analysis given more encouraging results than the ipecacuanha treatment properly employed. The simple fact is that not all cases of chronic amebic dysentery yield to either rectal lavage or ipecacuanha even though carried out with great thoroughness. It is desired to place on record a case in which appendicostomy followed by irrigations with a solution of quinin resulted in a remarkable cure. We favor doing the operation in two stages, believing that it is best not to open the appendix until firm adhesions have taken place between the cecum and parietal peritoneum. If the mesoappendix is ligated the blood-supply to the appendix is cut off and gangrene is almost certain to follow. Bring the base of the appendix well up against the abdominal wall, stitching the mesoappendix to the parietal peritoneum. The appendix is snipped off with a pair of scissors after brushing it over with a solution of cocain. As compared with cecostomy we unhesitatingly pronounce in favor of appendicostomy, since it is impossible to prevent leakage after the former operation. It is our belief that the fistula should, as a rule, be maintained indefinitely if the patient contemplate residence or travel in a tropical country. Closure of the fistula is most easily accomplished when desirable.

Medicolegal

Liability for Leaving Sponge in Abdomen

The Court of Appeals of Kentucky says, in Samuels vs. Willis (118 S. W. R. 339), a malpractice case, that the defendant was a surgeon of many years' experience in performing abdominal operations. He was called to operate on the plaintiff for ovaritis. He sent down a trained nurse and followed the next day with a medical student as assistant. Several physicians of the neighborhood came in to witness the operation. After the patient had been put under the influence of an anesthetic, the abdomen was opened by a five or six inch incision, the intestines were pressed aside from the infected region, and in order that they might be held in place, and so as not to interfere with the operator's work, a number of surgical sponges were inserted in the abdominal cavity, forming a kind of cofferdam about the organ to be operated on. These sponges were described as gauze cloths about 14 inches by 6 inches, stitched together. After the operation the sponges were intended to be removed and the cut in the abdomen drawn together by stitches, leaving a small opening in which was inserted strips of the gauze for drainage purposes.

The operation was thought to have been a success, but the patient did not respond by the anticipated recovery. Instead, after a few days, she grew worse. Finally, and in about thirty days after the operation, it was discovered through a part of the original opening made in the abdomen, that some foreign substance was lying near the surface, which on being removed was discovered to be one of the surgical sponges used at the operation. So it was claimed by the plaintiff. It was incrustated in and saturated with foul-smelling pus. After its removal the patient improved in health, but there was left a sinus, which it was claimed had developed into a fecal fistula.

This suit was brought, the plaintiff charging malpractice in that the defendant negligently left or suffered to be left in her person after the operation the surgical sponge, which irritated the intestines, causing them to fester and ulcerate, creating the fistula, which emitted fecal matter and noxious gases to the serious impairment of her health, and causing her sickness and humiliation, mental and physical suffering, for which she sought damages. Simplified, the charge in the original petition was that the defendant had carelessly left foreign substances in the plaintiff's abdomen after the operation, which had perforated her bowels, producing the ill effects specified. But it was doubtless thought by the plaintiff's counsel on reflection that they would be held to show a perforation in order to recover, and that by the foreign substance left there, whether the sponge or other thing; that to perforate required a cut or puncture. Unwilling to rest their case on such a narrow charge, they by amendment sought to and did enlarge it. First they withdrew the charge that by the substances left in the abdomen the bowels had been perforated. In lieu they charged: First, that the defendant in the course of the operation negligently cut or perforated her intestines; and, second, that the sponge which he negligently left in her abdomen ulcerated her intestines "and left an opening therein," festering and gathering pus in her bowels.

When the evidence failed to support the first charge made in the amendment, the plaintiff was still at liberty to sustain the second, if she could, and such was the issue presented by the pleadings. Proof on that issue was admitted from each side. Expert witnesses were brought from great distances by the defendant, whose testimony in the main, if not wholly, was on that point. The jury's attention was directed sharply to that issue of fact. Motions for a peremptory instruction for the defendant and for judgment on the pleadings were properly overruled.

While the defendant was testifying he was required on cross-examination to answer the question whether he carried a policy of insurance against accidents of that kind. Before another witness had been introduced the trial judge receded from his ruling on that point. Moreover, on his re-examination before the matter was withdrawn the defendant was questioned thus: "You have been asked about insurance against suits for malpractice. I will ask you if the terms of your policy cover any damages that may be recovered in a case like this?" His answer was: "Not in the slightest." The court sees no cause to suspect that the jury would have disregarded the witness' answer, or did not obey the subsequent admonition of the judge. The error was probably harmless in the first place, and was cured in the next.

The defendant testified, and a number of other witnesses in his behalf testified, as to the customary and correct method of skilled physicians in performing the operation which was the subject of this suit. Some of the witnesses were asked the hypothetical question whether, if the operation was performed in that manner, it was an ordinarily careful manner of doing it, or was negligent. On objection the witnesses were not allowed to answer that question. This was the correct ruling. That was for the jury alone. Witnesses from a profession may be called to testify concerning the teachings of their science, and the customs of their craft, but whether these things amount to due care is for the court or jury to say in a controverted case.

Many of the physicians testifying on behalf of the defendant said that the best of surgeons left a sponge or some foreign substance in the bodies of their patients in performing similar operations. It was argued from this that, as the highest degree of skill and care are not exempt from the commission of such accidents, a similar lapse by the defendant was at least not other than "ordinary care;" but that did not follow. Because all men are at some time careless does not relieve any man from the legal consequences of his careless act; but even that was for the jury to say whether the defendant exercised the degree of care in the case which ordinarily prudent and skilled surgeons, who practice in similar localities, usually exercise in such matters.

The evidence was conflicting whether the defendant left the sponge in the plaintiff's body, but it was there. Its presence was not otherwise accounted for. He alone placed and removed the sponges that were used in the operation. There was considerable evidence tending to show it was left there by the defendant, and that he did not pursue the course which his own witnesses of his profession said was customary and necessary to verify whether all sponges had been removed.

The trial resulted in a verdict and judgment for $3,500 for the plaintiff. The court thinks that a statement of the case disposed of the claim that the damages were excessive, and it affirms the judgment.

Burden of Proof and Presumptions in Abortion Cases

The Supreme Court of Utah says, in the case of State vs. Wells (100 Pac. R. 681), that the statute of that state is that "every person who provides, supplies or administers to any

pregnant woman, or procures any such woman to take any medicine, drug or substance, or uses or employs any instrument or other means whatever, with intent thereby to procure the miscarriage of such woman, unless the same is necessary to preserve her life, is punishable," etc. Under such a statute as this the authorities generally hold, and the court thinks correctly, that it is essential for the state to allege and prove that the production of the miscarriage was not necessary to save the woman's life, and that the burden of proving such fact is on the state.

The authorities are also to the effect that, when it is shown that the woman was healthy and in a normal condition, and that medicine was administered to her, or an operation performed on her to produce a miscarriage, the evidence is sufficient to raise the inference, and to find the fact, that the production of the miscarriage was not necessary to save the woman's life, or that it is sufficient where it is shown that there was nothing in the condition of the woman to indicate any necessity for a produced miscarriage, and that the negative in the information need not be shown by direct or positive evidence, but may be shown by circumstantial evidence. It is not enough however, that circumstances be proved from which an inference may be deduced that the production of the miscarriage was not necessary to preserve the life of the woman, but they must also be inconsistent with every other reasonable conclusion.

If an operation to produce a miscarriage is performed on a woman of ordinary good health and of normal physical conditions, the performance of such an operation is inconsistent with the conclusion that it is necessary to preserve her life. But in such case the good health and physical conditions of the woman may not be presumed, in the absence of testimony tending to show them, for the rule is also well settled that, "where circumstantial evidence is relied on, the circumstances must be proved, and not themselves presumed."

The fact that the woman was unmarried does not tend to show that the operation was not necessary to save her life any more than if she had been married. If any presumptions at all are to be indulged, it is more likely, for various reasons, that it might be more necessary, in order to preserve the life of the woman, to perform such an operation on an unmarried than on a married woman.

Nor does the fact that the defendant had illicit sexual intercourse with the woman necessarily agree with and support the conclusion that the operation was not necessary to preserve her life. If, because of the woman's condition of ill health, or other physical conditions, or bodily ailment, such an operation became necessary to save her life, it was just as necessary to perform the operation whether the woman was pregnant by the defendant or by another.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

September 23

1 Practical Suggestions for the Life-Insurance Examiner. W. E. Porter, New York.
2 *The Responsibility of the General Practitioner for Freedom of Medical Research. W. B. Cannon, Cambridge, Mass.
3 Serodiagnosis of Syphilis. F. P. Gay, Boston.
4 *Laboratory Work by the Country Physician. M. A. Cummings, Winchester, Mass.
5 *Suppurative Pericystitis. A. L. Chute, Boston.

2. **Freedom of Medical Research.**—Cannon reviews the work that has been done by the Council on the Defence of Medical Research of the American Medical Association. This Council is composed of representatives of various medical sciences, who live in well-separated parts of the country. During the past year the Council has been actively investigating the conditions of animal experimentation in laboratories throughout the United States, has taken precautions against the abuse of animal experimentation and against misconceptions of the conditions and purposes of medical research, and has planned a series of papers by experts which will serve to diffuse information regarding laboratory procedures and the results of laboratory study of disease.

In order to learn the conditions of medical research, a circular was sent to all the most prominent schools; reports have been returned for more than eighty. In this circular questions were asked as to the approximate number of different kinds of animals used each year; the methods of securing these animals; the number of dogs and cats killed in the city merely to dispose of the excess; the care of animals in the medical school, including the ventilation, warmth, cleanliness and lighting of their rooms; whether operations likely to involve pain were always performed under anesthesia; whether students were permitted to carry on independent investigation or were cautioned against it; whether experimental work was conducted under rules; and whether any public hostility to animal experimentation existed in the community. These questions have been fully answered. In a large number of laboratories dogs and cats are secured from the city pound or the city police, and in some schools owners contribute animals to be destroyed. In one instance animals are reported as being obtained from officers of the humane society, who had investigated the laboratories and had become convinced that the animals are humanely treated. The accommodations for experimental animals are reported as being well-lighted, well-ventilated, properly warmed and clean; in many instances special animal houses have been built, and in five instances a special attendant is provided to care for the rooms and their occupants.

In answer to the question whether any cutting operations on unanesthetized animals are performed, all the schools that use animals have reported "No." The number of schools in which animals are kept alive after operation are very few. From these schools the testimony is uniform that hospital after-care is always given to avoid discomfort. There is absolutely uniform testimony that students are supervised in any work which they do on animals, and, in fact, are not permitted to perform any experiments, except in a few of the laboratories, on any animals other than frogs.

4. **Laboratory Work by the Country Physician.**—Cummings urges that every practitioner should own or have access to a microscope with oil-immersion lens, and as he uses this from time to time he will find his facility increasing, and with that facility a greater satisfaction in his ability to do better work. Bacteriologic work may also be done, as in examining sore throats. By keeping on hand a few culture tubes, which may be obtained at small expense from some of the medical supply houses, and also sterile swabs, one can take a culture from a suspected throat, and after keeping it in a warm place for from twelve to eighteen hours, there will be a sufficient growth to make a smear on a slide. This may be stained with Loeffler's blue, and on examination through the oil-immersion lens, will show the presence or absence of bacilli. In the matter of examination of the blood, one does not need to be specially expert to determine roughly the hemoglobin by the Tallquist scale, or the contour and relative size of the red corpuscles and presence of white corpuscles in unusual number by means of the Leishman-Wright stain, all of which may be done in ten minutes. The same stain will bring out the plasmodium of malaria if it is present. The determination of the character of tissue changes and of the chemical and bacterial content of fluids, as well as the preparation of sera and vaccines, must be left to the expert.

5. **Suppurative Pericystitis.**—Suppurative pericystitis is a somewhat uncommon condition in which suppuration takes place in the zone of loose tissue above the bladder, and in which either a part or the whole of the space of Retzius becomes a veritable abscess cavity. Chute found that in a large proportion of cases the infection is secondary to some disease of the lower urinary tract. The infection of the prevesical space takes place by direct extension, or through the lymphatics. In a considerable number of cases of suppurative pericystitis the infection is through the blood stream and may come from a focus existing in practically any part of the body. In some instances the disease is an extension from a neighboring intra-abdominal or intrapelvic lesion. The char-

acteristic thing diagnostically is the presence of a mass above the pubes that more or less closely resembles a full bladder, but that is unaffected by passing a catheter. The disease is one that will probably always have a considerable mortality. It is of a secondary character and its mortality will depend largely on the nature of the disease that it is secondary to. The treatment should be free drainage of the pus collection. Chute reports one case.

Lancet-Clinic, Cincinnati

September 18

6 Direct Laryngoscopy. R. H. Johnston, Baltimore.
7 Pellagra. T. C. Minor, Cincinnati.
8 Tumors of the Mediastinum. D. D. Deneen, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

September 10

9 The Physician as a Public Educator. W. L. Peple, Richmond.
10 Local Anesthesia in Major Operative Work. E. M. Hasbrouck, Washington, D. C.
11 Public Schools and Public Health. C. G. Kerley, New York.
12 The Value of Local Medical Societies. V. V. Anderson, Lynchburg.
13 *Re-naming of Malaria—Anophelesis (?) E. W. Robertson, Onancock.

13. **Anophelesis.**—Robertson considers the term malaria a misnomer. The anopheles is the *sine qua non* of the disease called "malaria." It digests the parasite or "develops" it in its body. It becomes its property—a part of its body; it is a harmless germ to it, becoming physiologic like the viper's venom in his own body, but it becomes pathologic to mankind, after being bitten with almost a mathematical precision, when a train of fever and blood havoc supervenes. Therefore, he asks, why not accept the term "anophelesis?"

Annals of Surgery, Philadelphia

September

14 An Analytic and Statistic Review of 1,000 Cases of Head Injury (continued). C. Phelps, New York.
15 *Skin Grafting at the Johns Hopkins Hospital. J. S. Davis, Baltimore.
16 Cyst of the Round Ligament of the Liver. M. S. Henderson, Rochester, Minn.
17 Hour-Glass Stomach. W. A. Downes, New York.
18 *Diagnosis and Treatment of Carcinoma of the Cecum. E. A. Smith, Buffalo, N. Y.
19 *Resection of the Colon for Cancer and Tuberculosis. J. H. Gibbon, Philadelphia.
20 Large Phagedenic Ulcer of the Abdomen. W. H. Luckett, New York.
21 Inguinal Hernia in the Female. W. B. Coley, New York.
22 Surgical Aspects of Chronic Hypertrophic Arthritis. G. P. Muller, Philadelphia.

15. **Skin Grafting.**—Davis' paper is based on a review of 544 cases in which skin-grafting was done in the clinic of Dr. Halsted at the Johns Hopkins Hospital. In this series all types of grafts have been used and skin defects on almost every part of the body have been grafted. It was found that the general health of the patient must be taken into consideration when skin grafting is contemplated and grafts to be successful must only be transplanted to healthy wounds. As a rule, grafts do not take well on luetic individuals. No antiseptics must touch the flaps before or after cutting. A general anesthetic is necessary in the majority of cases in which large grafts are removed. It is best to cover the defect with a single large graft, if possible, as the healing is just as satisfactory as if several small flaps were used and the scar is much smaller. Silver foil immediately over the graft has proved its worth, but it is best to apply it without the paper and not to use alcohol. Temporary moist salt gauze dressings are also satisfactory. Grafting, even if only partially successful, in the majority of cases will shorten the time in the hospital and accelerate final healing. Partial grafting nearly always stimulates epidermal growth from the edges of the wound.

Autodermic grafts take somewhat better than isodermic, but isodermic grafts are much more successful than is generally supposed. When a black superficial graft is applied to a defect on a white person the pigment disappears sooner or later, and *vice versa*. The majority of Thiersch grafts, especially in breast cases, that Davis has examined, were still adherent throughout the greater part of their extent. The shrinkage in the size of a wound after grafting is in some cases quite remarkable.

Contraction is prevented to a large extent by grafting, although it sometimes occurs, especially under Thiersch grafts on exposed positions, such as the palm of the hand. In such locations the whole thickness of the skin should be transplanted. Slough of the axillary flap in breast cases has little effect on the healing of the grafts, as in many of the complete "takes" there was slough of the flap, and in many of the partial "takes" there was no slough. Mild wound infection, such as pyocyaneus, seems to have little effect on the ultimate healing of the graft.

18. **Carcinoma of the Cecum.**—Smith reports two cases treated successfully by resection of the cecum. He says that in the future he will choose for the operation in resecting the cecum for removable carcinoma, inversion of both ends of the cut intestine followed by lateral anastomosis by the clamp method between the stumps, or between the stump of the ileum and the most accessible portion of the colon, preferably the ascending or transverse colon.

19. **Resection of Colon.**—Gibbon reports 10 cases which he summarizes as follows: 1. Acute intestinal obstruction; carcinoma of colon; thoracic aneurism and chronic endocarditis. Resection of descending colon and immediate anastomosis. Sudden death eight hours later. 2. Acute intestinal obstruction; adenocarcinoma of colon. Resection and immediate anastomosis. Death twenty-three days after operation. 3. Partial obstruction and carcinoma of transverse colon and sigmoid. Resection of transverse and descending colon; immediate anastomosis. Recovery; patient well to-day. 4. Tuberculous strictures of ileum; tuberculous peritonitis. Resection of ileum and cecum, Sept. 28, 1905. Second operation, Jan. 20, 1906, for fecal fistula. Lateral anastomosis of ileum and transverse colon. Third operation, January, 1907, same condition; lateral anastomosis of ileum and sigmoid. Fourth operation, May 1, 1907; resection of transverse colon with a portion of the ileum. Fifth operation, May 19, 1907; jejunostomy. Patient died May 21, 1907, twenty months after first operation. 5. Obstruction of bowels due to carcinoma of sigmoid. Operation; colostomy, and eight days later resection and anastomosis. Recovery, with death from recurrence one year later. 6. Carcinoma of appendix and cecum. Resection of cecum, lateral anastomosis, Oct. 5, 1907. Death on seventh day after operation. 7. Carcinoma of ascending colon, March 28, 1908. Recovery; well at the present time. 8. Acute intestinal obstruction due to carcinoma of splenic flexure. Colostomy, May 12, 1908, followed by resection May 20, 1908. Death June 6, 1908. 9. Tuberculosis of cecum and peritoneum. Resection of cecum. Recovery; well to-day. 10. Carcinoma of sigmoid. Resection and immediate anastomosis, Jan. 31, 1909. Death, Feb. 14, 1909.

University of Pennsylvania Medical Bulletin, Philadelphia

September

23 The Development of Public Health Work in Philadelphia. A. C. Abbot, Philadelphia.
24 The Faculty of the Early Eighties and its Influence on Medical Men. H. A. Hare, Philadelphia.
25 Radiographic Statistics of the Sesamoid in the Tendon of the Gastrocnemius. H. K. Pancoast, Philadelphia.
26 Examination of Some of the Diabetic Foods of Commerce. D. W. Fetterolf, Philadelphia.

American Journal of Medical Sciences, Philadelphia

September

27 Infection of Urine and Urinary Tract by *Bacillus Coli Communis* in Infancy. J. L. Morse, Boston.
28 *Diagnosis and Treatment of Bilateral Cystic Kidneys, with Special Reference to the Determination of the Renal Function. M. Krotoszyner, San Francisco.
29 *Value of the Wassermann Reaction in Cardiac and Vascular Disease. J. Collins and B. Sachs, New York.
30 Various Types of Plague and their Clinical Manifestations. N. H. Choksy, Bombay, India.
31 *Leprosy in the Philippine Islands and its Treatment. V. G. Heiser, Manila, P. I.
32 Luetic Bursopathy of Verneuil. J. W. Churchman, Baltimore.
33 Chorea a Symptom—Not a Disease. G. M. Swift, New York.
34 Practical Value of the Association Test. P. Bailey, New York.
35 *Importance of Blood Cultures in the Study of Infections of Otitic Origin. E. Libman and H. L. Cellar, New York.
36 *Tuberculin-Treated Guinea-Pigs in Recognition of Tuberculosis. G. Ebright, San Francisco.

28. **Bilateral Cystic Kidneys.**—A careful study of three personal cases and of others recorded in the literature convinces

Krotoszyner that polycystic degeneration of the kidneys is in almost all instances a bilateral affection. In cases in which, for the time being, one kidney appears to be anatomically and functionally healthy, an involvement of this organ may be expected to develop later. Determination of the kidney function is indispensable prior to decision on any operative procedure. Nephrectomy in cystic kidney is always contraindicated. Excruciating pain, general sepsis caused by suppuration of cysts, profuse hematuria, and distressing symptoms due to the presence of enormously large cysts are, under favorable conditions (good renal function), indications for operative interference. Nephrotomy with puncture of cysts, decapsulation and nephrofixation are the operative procedures which in selected cases may give satisfactory (temporary) results.

29. **Value of Wassermann Reaction.**—From a study of 36 cases of cardiac and vascular disease, the importance of syphilis as a causative factor is established in a very large percentage of all the cases. The highest percentage was obtained in cases of aneurism, in which a positive Wassermann reaction was obtained in all of 5 cases. In the cases of aortic disease, 10 out of 13 cases gave a strongly positive reaction; 2 gave a weak positive reaction. In marked contrast to this are the cases of diffuse chronic endocarditis affecting the mitral valve in which only 1 of the 7 cases gave a positive reaction. Collins and Sachs believe that the inference is justified that rheumatic and other infectious agencies are a much more potent etiologic factor in diffuse chronic endocarditis than is syphilis. Taking all these facts into consideration, there can be little doubt that when we have pronounced symptoms of aneurism or of aortic disease, it is well to suspect syphilis, even though the manifestations may be latent. Even in those cases in which articular rheumatism and other infectious agents may have played some sort of rôle, and in which metallic poison or abuse of alcohol or of nicotin be admitted, if a Wassermann reaction gives positive results, antisyphilitic treatment should be instituted, whatever else may have been discovered regarding the antecedent history of the patient. No doubt articular rheumatism and syphilis occur often enough in one and the same individual, and if the course of antisyphilitic treatment has been decided on, we may at least ask that it be properly administered. Collins and Sachs favor the routine treatment by hypodermic injection of mercury. Their best results have been obtained by the use of deep injections of corrosive sublimate. In some cases marked improvement in the cardiac and vascular symptoms followed on such treatment, but even if the vascular system should not improve the mercurial treatment, a positive Wassermann reaction would justify vigorous specific treatment for the purpose of preventing serious syphilitic involvement of other organs and systems of the body.

31. **Leprosy.**—Heiser has employed the *x*-ray successfully in a few cases, but does not regard it as being suitable as a routine treatment. The cases in which this form of treatment is apparently of value are the early stages of the tuberculous type in young and otherwise healthy subjects. The breaking down by the *x*-rays of one large, leprous granuloma of an individual usually results in marked coincident improvement in the granulomas situated in parts of the body far removed, and to which the *x*-rays have not been applied. The experience in the Philippines during the past three years demonstrates that segregation has decreased the incidence of leprosy by over 50 per cent.

35. Abstracted in THE JOURNAL, June 19, 1909, p. 2017.

36. **Tuberculin Reaction in Guinea-Pigs.**—The experiments on which Ebright's paper is based were undertaken in order to determine to what extent the tuberculin reaction in guinea-pigs might be of value in the diagnosis of human tuberculosis. The problem which presented itself was to reduce the length of time required for the determination of tuberculosis in guinea-pigs that had been inoculated with material containing tubercle bacilli. The method employed in carrying out this test has simplicity to commend it and the fact that positive results are conclusive. The technic consists of making an emulsion of the suspected material in normal salt solution, if it is not already fluid enough to be injected through a coarse syringe or sharp-pointed, improvised pipette. Three guinea-pigs are inoculated by injecting a considerable quantity under the skin of the abdomen. At the end of six days one pig is given 0.25 c.c. of tuberculin hypodermically on the other side of the abdomen, and is chloroformed at the end of twenty-four hours and autopsied. The fluids at the site of the original inoculation are smeared on a slide and examined in the ordinary way for tubercle bacilli. If the first pig results negatively, another is examined in the same way by giving tuberculin at the end of two weeks, and making the autopsy at the end of twenty-four hours. If this is also negative, the third pig is given tuberculin at the end of from four to six weeks, and the result of its examination is a check on the first two. The test offers a means in a considerable proportion of cases, of making a diagnosis at the end of a week instead of waiting until the lapse of from four to eight weeks. It also presents a method of distinguishing tubercle bacilli from other acid-fast bacilli, especially when, as often happens, they are present in large numbers.

Journal Missouri State Medical Association, St. Louis

September

37 Dr. Adam Hammer, Surgeon and Apostle of Higher Medical Education. J. M. Ball, St. Louis.
38 Tuberculosis as the General Practitioner Sees it. O. H. Brown, Mt. Vernon.
39 Acute Pulmonary Edema with Report of Cases. J. Q. Chambers, Kansas City.
40 The Art of Refraction. J. Green, St. Louis.

Journal of Biological Chemistry, Baltimore

September

41 *The Decomposition of β-Oxybutyric Acid and Aceto-Acetic Acid by Enzymes of the Liver. A. J. Wakeman and H. D. Dakin, New York.
42 The Leucin Fraction of Proteins. P. A. Levene and D. D. Van Slyke, New York.
43 The Leucin Fraction in Casein and Edestin. P. A. Levene and D. D. Van Slyke, New York.
44 Nature of the Acid-Soluble Phosphorous Compounds of some Important Feeding Materials. E. B. Hart, and W. E. Tottingham, Madison, Wis.
45 *Volumetric Method for the Estimation of Casein in Cow's Milk. E. B. Hart, Madison, Wis.
46 Preformed Hypoxanthin. V. N. Leonard and W. Jones, Baltimore.
47 Intracellular Enzymes of Lower Fungi, Especially Those of Penicillium Camemberti. A. W. Dox, New Haven, Conn.

41. **Decomposition of β-Oxybutyric Acid.**—The experiments of Wakeman and Dakin show that β-oxybutyric acid is oxidized by means of material derived from the liver, but not containing the liver cells. The oxidizing power of such material is destroyed by heating; hence it is concluded that the oxidation is due to a ferment contained in the liver tissue. The results also show clearly that an enzyme capable of decomposing aceto-acetic acid is also present in normal liver tissue, and that this action is not increased by the addition of blood.

45. **Estimation of Casein.**—Hart gives the following method of volumetric determination of casein in cows' milk: 10.5 c.c. of milk are placed in a 200 c.c. Erlenmeyer flask, 75 c.c. of distilled water, at room temperature, are added and 1 to 1.5 c.c. of a 10 per cent. solution of acetic acid. The flask is given a vigorous rotary motion. Usually 1.5 c.c. of acetic acid gives a clear and fast filtering separation, but, occasionally, with milks low in casein, a better separation is effected if a little less acetic acid is used. The separated precipitate is now filtered through a 9 to 11 cm. filter. As the casein accumulates on the filter, there is a marked retardation of the filtering process. This can again be made rapid by conducting a fine stream of cold water against the upper point of contact of filter paper and casein. This loosens the casein mass and accumulates it at the apex of the filter. This is all essential to the proper working of the process. It is absolutely necessary that all loosely combined or absorbed acetic acid be removed from the precipitate by a thorough washing and also that cold water be used in the process, in order to maintain the casein in a loose, easily soluble mass. The readiness with which the casein dissolves in the dilute alkali is largely determined by the temperature to which it has been subjected in the manipulations. A temperature not exceeding 20 C., and one that in his experience prevented the formation of large compact masses, is recommended. The particles of casein adhering to the glass of the precipitating flask need not be removed, as the bulk of the precipitate is again to be returned to the same flask. They should, however, be thoroughly

washed. The washings should continue until at least 250 to 300 c.c. of filtrate have accumulated. This insures removal of all acid. If the process has been properly conducted and the right amount of acid used in the precipitation, the filtrate will be perfectly clear.

The precipitate, together with the filter paper, is now returned to the flask in which the precipitation was made, from 75 to 80 c.c. of neutral carbon dioxid free water are added, and then a few drops of phenolphthalein and 10 c.c. of $\frac{N}{10}$ potassium hydroxid. The flask is stoppered with a rubber stopper, and vigorously shaken, either by hand or in a machine, until solution. Complete solution is easily indicated even in the presence of the filter paper by the disappearance of the white casein particles, that otherwise would settle to the bottom. After solution, the stopper is rinsed off with neutral carbon dioxid free water and immediately titrated with $\frac{N}{10}$ acid to the disappearance of the red color. It is imperative that a blank should be run parallel with the entire determination. In the author's experience it was always found that even when all ordinary precautions were taken to secure neutrality, a blank of 0.2 to 0.3 c.c. acidity was obtained. The correction for the blank—and in his laboratory it was invariably in the same direction—is made by its addition to the number of cubic centimeters of acid used in the titration. The difference between this corrected acid reading and the 10 c.c. of alkali used gives directly the percentage of casein in the milk. For example: Suppose it took 6.7 c.c. of $\frac{N}{10}$ sulphuric acid in the titration, and the blank was 0.2 c.c., then the per cent. of casein becomes 10 — 6.9, or 3.1 per cent. This method is rapid and, if properly conducted, is said to give accurate results in less than two hours.

Chicago Medical Recorder

September

48 Studies in Contemporary Workmen's Compensation (Second Paper). W. H. Allport, Chicago.
49 The Restoration of a Recent Perineal Laceration. O. Betz, Heilbronn, Germany.
50 Membranous Dysmenorrhea. J. T. U. Renaud, Chicago.

Journal Medical Society of New Jersey, Orange

September

51 *Intramuscular Mercurial Injections in Syphilis. H. A. Pulsford, South Orange.
52 Dyspepsia—A Misnomer. W. B. Stewart, Atlantic City.
53 *The Supernutritive Properties of Milk. A. McAlister, Camden.

51. Abstracted in THE JOURNAL, Aug. 7, 1909, p. 477.

53. Abstracted in THE JOURNAL, Aug. 28, 1909, p. 739.

Military Surgeon, Washington, D. C.

September

54 Civil Sanitary Function of the Army Medical Department in Territory under Military Control. E. L. Munson, Washington.
55 Favus: As Observed in the Inspection of Immigrants. J. B. Stoner, U. S. P. H. and M.-H. Service.
56 *Leprosy in Guam. G. L. Angeny, U. S. Navy.
57 Report of Twelfth International Congress on Alcoholism, held in London, July 18-24, 1909. F. L. Pleadwell, U. S. Navy.

56. **Leprosy in Guam.**—In 11 cases of leprosy, 2 of the anesthetic variety, 4 of the tuberculous variety, and 5 of the mixed variety, hydrargyrum succinimidum, gr. 1/5, was injected into the buttocks every second day for the first thirty days, then gr. 2/5 every fourth day, to date. In a few instances mild symptoms of mercuralism manifested themselves and necessitated the discontinuance of the treatment for several injections. In no case, however, did this occur until well along in the second month of the treatment. The results of nearly four months' treatment by this method are not encouraging, although in a majority of the cases some improvement of the subjective symptoms has taken place. Ten of the eleven patients state that they feel better since the treatment was begun. When asked to define the improvement they reply that they "feel better over the entire body." In 9 cases neuralgic pain was a prominent symptom. In 2 cases, 1 of the nerve and the other of the mixed type, the patients experienced entire relief from pain shortly after the first few injections; in 5 others, the attacks of pain recur less frequently and with less severity, and in the remaining 2 this symptom has not been modified. It is impossible, however, to detect any improvement in the objective symptoms. In one patient who has persistently held that he "feels better," there has been a decided loss of weight, an incipient leprous keratitis has advanced so as to destroy, entirely, the vision of the affected eye, several large ulcers of the extremities have manifested no tendency to heal, and the bacilli are far more numerous than when the treatment was instituted. In another case of mixed leprosy, a large bulla which developed on the foot during the third month of the treatment has left, as a sequel, an ulcer several square inches in area, which will eventually destroy one or more toes. A third patient has shown a decided increase in the facial lepromata, and an increase in the number of bacilli. In this and the remaining cases, aside from the improvement in the subjective symptoms, the disease has apparently pursued its normal course, unaffected by the treatment. While in some cases the existing skin lesions have healed, in most cases new lesions have appeared, so that now, after nearly four months of treatment, the individual cases show about the same number of open lesions as when treatment was begun. One patient declares that the treatment has made him worse, and he certainly has shown no improvement. Although the method has not been followed by any decided benefit, the results are not regarded as conclusive by Angeny, and it is his intention to continue the injections in the patients now under treatment and to add to the list a number of other cases.

Progressive Medicine, Philadelphia

September

58 Diseases of the Thorax and its Viscera, including the Heart, Lungs, and Blood-Vessels. W. Ewart, London, Eng.
59 Dermatology and Syphilis. W. S. Gottheil, New York.
60 Obstetrics. E. P. Davis, Philadelphia.
61 Diseases of the Nervous System. W. G. Spiller, Philadelphia.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

September

62 Treatment of Certain Vesical Affections by Hydraulic Distention. E. Garceau, Boston.
63 *Suprapubic Operation on Pelvic Floor for Prolapse of the Uterus. W. M. Polk, New York.
64 Struma Ovarii. R. T. Frank, New York.
65 *Decidual Expulsion Occurring at Each Menstrual Period. O. Frankl, Vienna, and J. J. Scroggs, Beaver, Pa.
66 *Removal of Unusually Large Ovarian Cyst. S. H. Knight, Detroit, Mich.
67 Abdominal Myomectomy for Large Uterine Fibroids. H. P. Kuhn and W. J. Frick, Kansas City, Mo.
68 The Air of the Operating Room as a Possible Factor in the Infection of Wounds. H. Robb, Cleveland, Ohio.
69 Consideration of Eclampsia with Report of a Case Accompanied by Hemiplegia. C. W. Barrett, and J. H. Harger, Chicago.
70 Uncontrollable Hemorrhage from the Non-Puerperal Uterus. G. H. Mallett, New York.
71 Dermatitis Exfoliativa Neonatorum. H. G. Myrick, Boston.

63. **Suprapubic Operation on Pelvic Floor.**—In a case of complete relaxation, with elongation of all the interpelvic supports of the uterus, vagina and bladder, Polk performed an original operation, which, he says, is designed to aid in the correction of all degrees of prolapsus uteri, but particularly its ultra forms. The patient is placed in bed and treated for a week or ten days. Reduce the prolapse, and permit the affected viscera and surrounding structures to regain as much of the normal status as possible. After opening the abdomen, the Trendelenburg position being secured, and the pelvis (the true pelvis) cleared of all intestine, except the lower sigmoid and rectum, the uterus is firmly caught with a double tenaculum at its anterior vaginal juncture. Pulling it up and making the vagina taut, an anteroposterior incision is made reaching from the tenaculum to the bladder (which meanwhile is held against the pubis), and extending through tissue to the recognizable vaginal wall. Through this opening, which is stretched laterally, the bladder is separated from the face of the vagina as far as the trigone or even somewhat beneath it. The ureters are pushed aside, and where they turn toward the trigone are displaced upward and forward with the bladder. The next step is to unite by suture with continuous kangaroo tendon the anterolateral lines of the vagina (one on each side) from below upward, beginning as far down as possible

and ending just below the upper end of the original incision. A second line of continuous kangaroo suture is then placed, so as to draw to the median line as much fascia and covering peritoneum as can be brought in from the sides of the bladder, the vagina and the uterus. The structures in this region which must be left outside the sutures are the ureters and the uterine arteries—the arteries are in danger at the upper end of this field, the ureters at the lower. The most important loops of this suture are those employed at the lower portions of the incision—the last two need not enter the vaginal tissue, but, going down to it, pass over, and then out on the opposite side as before. Their effect will be to accentuate the line of the bladder base, and to shorten the suspensory ligament of the bladder, as well as the lateral fascial connections of the vagina and the basic lines of the broad ligaments. The uterosacral ligaments are caught up at about the junction of the inner and middle thirds, drawn in from this point and stitched with the same suture material either to the side, below or to the outside of their uterine attachment, as is most easily done. It is essential to take in as much of the slack as is needed to give them their original supporting function.

If the uterus is to be retained, the operation, as described, will be carried out with the addition, if deemed best, of shortening the round ligaments, but this is not essential. If it is a senile uterus, Polk suggests that it be thrown forward and the fundus held in the sulcus behind the bladder by a retaining suture through the round ligament at each cornua. If the uterus is removed, the operation is then executed as described as far as the completion of the suturing in front of the uterus, then this organ is dissected or cut from its lateral attachments to about the level of the internal os, stopping short of the attachment of the uterosacral ligaments. The cut surfaces of the stump are stitched together in continuation of the line of original incision; the loose ends of the severed broad and round ligaments caught up and included in this line of suturing. And finally, the uterosacral ligaments are caught up at the junction with the stump; the right is drawn over and stitched to the stump to the left, and the left is drawn to overlap the right and stitched in corresponding position to that given the left ligament. After closing the abdominal wound, further procedure can be determined by the patient's condition.

65. **Decidual Expulsion at Menstrual Period.**—A woman, 27 years of age, had given birth to a child when 24. Labor was normal. Since then she has had at her menstrual periods severe pains, simulating true labor pains, and is relieved only after the expulsion of a cast-like membrane. Before this membrane is expelled a bloody discharge begins. Her family physician attended her during three periods and each time found a complete membranous cast of the uterine cavity. The surface of this cast is finely granular. On opening the cast one sees both tubal cornua, and that the internal surface shows large and small granular elevations; the thickness of this membrane is more than 1 cm. The patient was under the authors' observation during two menstrual periods, and each time she expelled a membranous cast and suffered severe, labor-like pains. Histologic examination shows a marked decidual formation. Frankl and Scroggs believe that this is not a case of dysmenorrhea membranacea, but a true decidua; that it is a product of pregnancy, although no part of the ovum was found. Apparently, the ovum died each month in the first stages of its development. The woman admitted that she cohabited with her husband just after the menstrual period, and therefore must have been impregnated immediately. The ovum died during the first days, but the decidua remained in the uterine cavity until the time of the next menstruation. At the time of the physiologic menstrual wave the separation of the decidua from the uterine wall began in which the thrombosis of the blood sinuses perhaps helped, and it was then expelled by the uterine contractions.

66. **Unusually Large Ovarian Cyst.**—Knight's case was one of multilocular adenoma of the ovary, and some of the daughter cysts were filled with a thin pea-soup-like fluid. The fluid part of the tumor collected amounted to 96 pints. The solid part of the tumor weighed 15 pounds. The whole together weighed 111 pounds. The patient herself weighed 87 pounds when she left the hospital.

Journal of Advanced Therapeutics, New York

September

72 High-Frequency Currents. F. De Kraft, New York.
73 The Correction of Flat-Foot. H. McIntosh, Boston.
74 Alto-Frequent Cytolysis of Cancer (continued). J. A. Riviere, Paris.

Cleveland Medical Journal

September

75 *Asthenia Universalis Congenita. B. Stiller, Budapest, Hungary.
76 *Intestinal Hemorrhage in Typhoid. J. H. Lowman, Cleveland.
77 Estimation of the Amount of Paralysis in Infantile Paralysis from the Point of View of Operative Treatment (Tendon and Muscle Transplantation, etc.). H. O. Feiss, Cleveland.
78 Delirium. J. Phillips, Cleveland.
79 Extent and Variety of Refraction Cases in Cleveland. L. K. Baker, Cleveland.
80 Fatal Phlebitis of the Cerebral Sinuses and Veins in a Child Fourteen Months Old. J. J. Thomas, Cleveland.

75. **Asthenia Universalis Congenita.**—In the course of his studies Stiller discovered a constitutional disease, hitherto unknown, which he has called asthenia universalis congenita. The predisposition shows itself even in the child in the atonic habitus—thin bone structure, long flat and sunken thorax, sharply sloping ribs and wide intercostal spaces. The angulus epigastricus, upper and lower chest apertures, as well as the pelvis, are narrow. The cranium outweighs the face, owing to the delicate and pointed lower jaw, the zygomatic bones and the nose being small in size also. This congenital, mostly inherited, asthenic predisposition tends to lead to a chain of disorders, which, as a rule, show themselves first after pubescence, and together with the congenital habitus form the asthenic disease. These disorders are manifold; but among them appear most often four large groups, i. e., enteroptosis, nervous dyspepsia, neurasthenia and dystrophia.

76. **Intestinal Hemorrhage in Typhoid.**—In 1,218 consecutive cases of typhoid running over eleven years in Lakeside Hospital, Cleveland, there have been 74 cases of intestinal hemorrhage, or 6.07 per cent.; 56 of them were men and 18 women. Of the hemorrhage cases in this series, 21 individuals, or 28.37 per cent., died; this is 1.72 per cent. of the entire number of cases. Of the 21 cases, 11, or 52.38 per cent., died of perforation, representing 14.8 per cent. of the hemorrhagic cases. Nine, or 12.16 per cent., died of toxemia, and one from the immediate direct effects of hemorrhage. The symptomatology of hemorrhage is often indefinite. In this series, 36, or 48.64 per cent., gave no prodromata. The symptoms recorded are: Four stools in 1 case; diarrhea in 3 cases; pain in 9 cases; sudden distention in 3 cases; fall of temperature in 13 cases; fall in blood pressure in 1 case; and delirium in 6 cases.

The chief therapeutic conception in intestinal hemorrhage is the securing and maintenance of an empty and collapsed bowel, whereby the vessels will be compressed and the conditions favoring arrest of hemorrhage will be produced. As patients rarely die as the result of the hemorrhage, and then almost always after several bleedings, one can reasonably expect that the patient will quickly recover from the results of the acute anemia, and the entire energy of the physician can be devoted, for a time at least, to stopping the bleeding. The abstinence can be continued six days after the hemorrhage ceases. A Leiter coil or cold applications to the abdomen, stimulants hypodermically, opium in small quantities for restlessness and active peristalsis and water are incidentally used as required; all bathing, except for comfort, is stopped. Lactate or chlorid of calcium is employed almost as a routine measure, although its use is not scientifically demanded unless the coagulation time is slow, which is not always the case. The older remedies, turpentine and ergot, are useless. Opium abolishes peristalsis and is an effective aid. Absolute quiet is essential.

Journal of Nervous and Mental Disease, Lancaster, Pa.

September

81 *Critical Study of the Sensory Functions of the Motor Zone (Pre-Rolandic Area); More Especially Stereognosis. H. H. Hoppe, Cincinnati.
82 Aneurism of the Left Anterior Cerebral Artery with Rupture Simulating Brain Tumor. J. A. Booth, New York.
83 Case of Syringomyelia. J. A. Booth, New York.
84 Two Cases of Encephalitis. S. D. Ingham, Philadelphia.

81. Abstracted in THE JOURNAL, July 17, 1909, p. 227.

Buffalo Medical Journal

September

85 The Buffalo Academy of Medicine in 1908-09. E. A. Bowerman, Buffalo.
86 County Sanitary Associations and their Uses. O. J. Hallenback, Canandaigua, N. Y.
87 *Relation of Local Skin Lesions to Flat-Foot. W. H. Billings, Buffalo.
88 Nervous Sequelæ of Infectious Diseases. J. W. Putnam, Buffalo.
89 Treatment of Placenta Prævia. H. Schwartz, St. Louis.
90 Modern Surgery of the Stomach. J. B. Deaver, Philadelphia.

87. **Relation of Skin Lesions to Flat-Foot.**—Billings claims that in about 80 per cent. of flat-foot cases, the skin covering the ankle and foot will present one or more conditions which seem to be closely related and always benefited, often cured, by correction of the deformity. The most common skin lesion associated with flat-foot is the callus. Excessive sweating of the feet is a troublesome skin condition frequently seen in flat-foot deformity. This condition is relieved as the foot gains in strength in its corrected position. Varicose ulcer located posterior to and above the internal maleolus is occasionally a complication of flat-foot. A soft corn between the fourth and fifth toes is almost always associated with transverse arch relaxation. Eczema between the toes, although not common, is always associated with flattened transverse arch. A troublesome fissure located between the fourth and fifth toes is often associated with a relaxed transverse arch and relieved by arch correction.

New Orleans Medical and Surgical Journal

September

91 Chronic Interstitial Nephritis. F. M. Thornhill, Arcadia, La.
92 Cretinism. J. D. Bloom, New Orleans.
93 Hawaii as a Location for Sanatorium for the Tuberculous. E. S. Goodhue, Kona, Hawaii.
94 Case of Infantile Scurvy Associated with Rickets. P. J. Kahle, New Orleans.
95 Pathologic Sleep: A Manifestation in Certain Nervous Diseases. E. M. Hummel, New Orleans.
96 Pellagra: Report of Eleven Cases from Mississippi. C. C. Bass, New Orleans.
97 Case of Tubal Abortion. A. Jacoby, New Orleans.
98 Tumor of Brain. J. B. Elliott, New Orleans.
99 When is Gonorrhea Cured? A. Nelken, New Orleans.
100 Acetonuria with Relation of Cases. L. G. LeBeuf, New Orleans.
101 Indications for Digitalis in Pneumonia. A. A. Herold, Shreveport, La.

The Laryngoscope, St. Louis

September

102 *Lipoma of the Larynx. M. A. Goldstein, St. Louis.
103 Action of the Respiratory Muscles in the Production of Voice. G. H. Makuen, Philadelphia.
104 Suction or Hyperemia Treatment of Acute Suppurative Otitis Media. E. J. Brown, Minneapolis.
105 Significance of Certain Labyrinth Symptoms. G. E. Shambaugh, Chicago.
106 *Pemphigus of the Throat. L. M. Hurd, New York.
107 Laryngostomy. C. Jackson, Pittsburg.
108 Cyst of Epiglottis. J. C. Beck, Chicago.
109 Self-Retaining Submucous Specula. S. G. Higgins, Milwaukee.

102. **Lipoma of Larynx.**—Goldstein reviews, briefly, 12 cases recorded in the literature, and cites 1 personal case in which two lipomas of large size were removed successfully under local anesthesia. A large rounded, pale, yellowish-pink mass completely filled the glottis, extending from the left lateral wall of the ventricular fossa, pushing the ventricular band upward and overlying both vocal cords. Owing to unusual size of this mass and its extreme convex surface, the left ventricular band was stretched and arched abnormally upward, so that it appeared almost in a line with the left arytenoid cartilage. The patient had complained for about a period of fifteen years of almost constant discomfort in speech and respiration, two symptoms which have become more aggravated from year to year, culminating in marked dyspnea, with change in position of the body, frequent paroxysms of coughing and marked emaciation, restless nights, nervous depression, inability to eat or to digest properly.

106. **Pemphigus of the Throat.**—In Hurd's case the pemphigus was limited entirely to the mucous membrane of the throat, an exceedingly rare condition.

Denver Medical Times and Utah Medical Journal

September

110 Typhoid Fever. L. P. Barbour, Rocky Ford, Colo.
111 Cesarean Section: With Report of a Case. F. Finney, La Junta, Colo.
112 Diseases of the Cow that May Affect the Wholesomeness of Milk. M. White, Denver.
113 Rabies—Plague. R. Anderson, Salt Lake City.

St. Paul Medical Journal

September

114 Recognition of an Uncompensated Heart. T. W. Stumm, St. Paul.
115 Some Atypical Gall-Stone Diseases. J. W. Andrews, Mankato, Minn.
116 Climate of the Northwestern States of America. H. L. Taylor, St. Paul.
117 *Epidemic Poliomyelitis. H. Sneve and W. Ramsey, St. Paul.

117. **Epidemic Poliomyelitis.**—Sneve and Ramsey have translated and abstracted the clinical description of the disease by Dr. Wickman of Stockholm, and the pathologic studies of Harbitz and Scheel of Christiania, and the bacteriology of the affection by Dr. Geirsvold of Christiania, Norway's state epidemiologist. They urge on every physician to report every suspicious case, and also to furnish spinal fluid to the city or state laboratory, and whenever possible to secure a post-mortem.

American Journal of Physiology, Boston

September

118 *The Paths of Excretion for Inorganic Compounds—IV. The Execretion of Magnesium. L. B. Mendel and S. R. Benedict, New Haven, Conn.
119 *Idem. V.—The Execretion of Calcium. L. B. Mendel and S. R. Benedict, New Haven, Conn.
120 *The Influence of the Isomers of Salicylic Acid on Metabolism. E. W. Rockwood, Iowa City, Iowa.

118. **Excretion of Magnesium.**—Mendel and Benedict find that when soluble magnesium compounds are introduced into animals by another route than the gastrointestinal tract, the greater portion of the excess injected leaves the body by way of the kidney within less than forty-eight hours. The intestinal path is of minor, if any, significance for magnesium introduced under these conditions. A considerable quantity of magnesium may be retained in the body for periods exceeding two weeks. The increased excretion of magnesium by the kidneys is accompanied by a marked rise in the urinary output of calcium. The calcium output in the feces is decreased, if any thing, at the same time. The parental introduction of magnesium sulphate in dogs and rabbits is never followed by purgation. The evidence for magnesium chlorid is not conclusive. Diuresis followed the use of both salts.

119. **Excretion of Calcium.**—The same authors find that excess of calcium chlorid may be eliminated by the kidneys and a simultaneous increased excretion through the bowel does not necessarily occur. A considerable quantity of the excess of calcium introduced may be retained for some time in the body. The increased excretion of calcium is accompanied by a rise in the urinary output of magnesium. The injections of calcium chlorid (with sodium chlorid solution) were followed by diuresis. It is suggested that the injection of either calcium or magnesium brings about the presence of an increased amount of the other metal in the blood as an antitoxic compensatory response of the organism whereby the toxic action of the injected metal is, to some extent, overcome.

120. **Influence of the Isomers of Salicylic Acid on Metabolism.**—Rockwood has experimented with metaoxybenzoic and paraoxybenzoic acids, which are isomers of salicylic acid (orthooxybenzoic acid) to determine their effect on metabolism. The experiments were made on a physician and three medical students. As is well known, orthooxybenzoic acid (salicylic acid) increases the elimination of uric acid in the urine. Rockwood concludes that this is due to an inhibition of uricolytic action rather than a stimulation of the nuclein-cleaving ferment. The meta-acids and para-acids do not affect the elimination of uric acid or of the other excretory products so far as they were determined.

American Journal of Urology, New York

September

121 The Pathology and Diagnosis of Dilatation of the Renal Pelvis. L. W. Bremerman, St. Louis.
122 The Surgical Anatomy of Inguinal Ectopia of the Testicle. L. de Raymond, Montpellier, France.
123 Circumcision with Cocain Anesthesia. S. Stevens, Battle Creek, Mich.
124 The Gonococcus, Its Relation to the Practice of Obstetrics and Gynecology. W. F. Thompson, Beaumont, Tex.

Journal of Cutaneous Diseases, New York

September

125 *Treatment of Certain Chronic Inflammatory Skin Diseases. L. A. Dühring, Philadelphia.

126 A Nodular, Terminating in a Ring Eruption (Granuloma Annulare). G. W. Wende, Buffalo.
127 *Osteopathies of Quaternary Syphilis (Gaucher). J. M. Winfield, Brooklyn.

125. **Chronic Inflammatory Skin Diseases.**—Dühring points out that some cases of eczema, psoriasis and other diseases are readily amenable to treatment, local or internal, or both, while others do not respond to the same line of treatment. The cutaneous lesions in appearance and pathologic anatomy may be the same in both sets of cases, yet they behave altogether differently under the same treatment. The reason, he says, may be found in what he believes to be an observation not sufficiently recognized, namely, that while the cutaneous lesions may be the same or closely similar in many cases, the causes producing them are not only varied, but may be entirely different in nature. The internal causes, whatever these may be, producing the cutaneous disturbance should be studied more closely and treated by appropriate means. Factors giving rise to disordered states of one or another part of the economy, require to be more closely investigated than is usually done. The rôle of general medicine should be brought into action more than is customary. For some cases it is indispensable. For nearly all, if not all, the chronic or persistent or recurring cases of eczema, and for some of the cases of psoriasis, and for some other allied forms of inflammation, Dühring believes there exist specific or general etiologic factors that must be determined on the plane of general medicine, and relieved by some means or other if the patient is to be permanently cured. Local treatment alone is inadequate for most of such cases.

127. **Osteopathies of Quaternary Syphilis.**—Winfield examined 46 patients which he divided into two lots: The first 17 individuals were simply examined for the external signs of inherited syphilis, and the second 29, in addition to the external examination, were subjected to the v. Pirquet tuberculin test and the Noguchi modification of the Wassermann test for syphilis. The ages of the patients ranged from 6 months to 14 years. Nine, of the first lot of 17, had Pott's disease; 3 of these had malformed heads (Olympic); 3 had typical Hutchinson's teeth, and 1 patient had both a misshapen head and pegged teeth. The remaining 8 of the 17 were suffering from hip disease; 3 of these had dental stigmata, and 2 had malformed heads. The total out of the first 17 who presented suspicious stigmata was 12, but according to the dictum of Gaucher only 1 of the 12, the individual with dorsal Pott's disease who had two dystrophies, Hutchinson's teeth and a malformed head, could be considered syphilitic.

Ten of the second lot of 29 were suffering from diseased spine, and 11 had disease of the hip, 3 had disease of both hip and spine, 2 had suppurating sinuses of the feet and ankles, and 2 had had abscesses of the wrists and hands. All the patients were tested for tuberculosis by the cutaneous method of v. Pirquet, and all but one reacted positively, some reacting more markedly than others; the greatest reaction was obtained in a child who had all the characteristic signs of inherited syphilis, and the family history obtained from the mother left no doubt but that the child was a victim of the inherited taint; this case also gave a positive Noguchi-Wassermann reaction. Ten out of the 29 had some stigmata suggestive of syphilis; such as Hutchinson's teeth, high-arched palates, saddle-noses, overhanging foreheads and other malformations of the head; 16 had no suggestive signs and 4 left the hospital before the examination was completed. Four of the patients with external signs suggestive of inherited syphilis and 6 who were absolutely free from all stigmata, reacted positively to the Noguchi-Wassermann test, making a total of 10 positive Wassermann tests out of the 29 examined, about one-third. The most marked reaction was in patients who had two or more dystrophies, and 2 with multiple abscesses of the wrist and hand, and 1 of those with sinuses of the foot. Three with a positive Wassermann reacted feebly to the v. Pirquet test, but the remaining 7 gave a marked reaction.

One patient out of the 29 did not react to either test; this was a baby about 6 months old, which undoubtedly was suffering from syphilis, and the probable reason why it was Wassermann negative was because it had been taking antisyphilitic remedies. Six of the patients with suggestive somatic signs, and who were negative to the Noguchi-Wassermann test, had been treated for syphilis. Winfield points out that this brings up the question, Can tuberculosis and syphilis exist simultaneously in the same individual? And is it possible to get a positive Wassermann reaction in all patients with inherited syphilis, who have not been treated for the disease?

Kansas City Medical Index-Lancet, Kansas City

September

128 The Causes and Prevention of Nervous Diseases. J. Punton, Kansas City.
129 Drug Eruptions. W. Frick, Kansas City.
130 The Anglo-American Medical Association of Berlin. F. C. Neff, Kansas City.
131 Charcot's Disease. B. A. Poorman, Kansas City.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

The Lancet, London

September 11

1 Forty Years of Hospital Experience. A. J. Pepper.
2 Three Cases of Sporadic Cretinism. G. R. Murray.
3 *Rabies, with Notes on Thirty Cases. W. J. Maloney.
4 *The Etiology of that Form of Dislocation of the Hip-Joint which is Generally Regarded as Congenital. R. Thompson.
5 *Vaccine Treatment of Somewhat Unusual Interest. E. W Allen.
6 Use of the Ultramicroscope for Early Diagnosis of Syphilis H. W. Bayly.

3. **Rabies.**—The only noteworthy point in the postmortem examination of the 15 cases in this series that terminated fatally was the presence in all but one of marked increase in the cerebrospinal fluid; the relief of the intracranial tension by lumbar puncture was found in three cases to be of some value in quietening very irritable patients; six series of experiments with the fluid as a means of antemortem diagnosis produced negative results. From the few cases cited it is obviously extremely difficult to assert that any patient is suffering from incipient rabies, so alleged cures may be discounted. Treatment after the disease was definitely declared proved invariably futile.

4. **Congenital Dislocation of Hip-Joint.**—Thompson suggests that in some cases that form of dislocation of the hip-joint which occurs in young infants and children without any apparent violence, and which is usually regarded as congenital, in reality may be due to pressure exerted on the hip-joint during the adoption of the erect attitude of such a nature as to produce displacement of the head of the normal femur from a nearly normal acetabulum. The history of a well-developed girl with dislocation of the hip rarely goes back before the adoption of the erect attitude. The fact that the child is well-developed is a considerable factor in the argument in favor of the condition being static rather than congenital. The female hip-joint is weaker and acts at a greater mechanical disadvantage than the male joint. The theory of the dislocation being congenital has so far entirely failed to explain the great preponderance of cases in females. This preponderance is explained by a reference to the comparative anatomy of the joints of the two sexes. The suggestion that the condition is static more easily explains the different conditions which may be encountered in the cases of so-called congenital dislocation of the hip, which should be called static dislocation.

5. **Vaccine Treatment.**—The cases treated by Allen were the following: (1) Double systemic infection by the *Streptococcus conglomeratus* (*scarlatinæ*) and the *Staphylococcus aureus;* (2) pneumococcal septicemia, arthritis and intramuscular abscesses; (3) pyuria; (4) delayed resolution after pneumonia; (5) infection of the antrum of Highmore by the *Bacillus influenzæ* and the pneumococcus; (6) asthma and bronchitis. Careful bacteriologic examinations in over 20 cases of asthma have failed to reveal the constant presence of any one particular organism; each case presents a complex picture, most swarm with micro-organisms, and a few have shown within the casts and spirals nothing but short streptococci, and Allen feels that a variety of streptococci is of considerable importance in the production of some of the symptoms of certain cases of severe bronchial asthma. Most of the patients are still under treatment and it is difficult to forecast the ultimate results. The majority are benefiting; in two or three the bronchitis has improved greatly, but on the asthma no beneficial effect whatever has been exercised.

British Medical Journal, London

September 11

7 Injuries of the Optic Nerve. J. J. Evans.
8 *Value of Surface Signs in the Diagnosis of Deep-Seated Disease. C. L. Isaac.
9 Oriental Sore of Northern India: A Protozoal Infection. R. M. Carter.
10 The Intensive Treatment of Syphilis by Aachen Methods. R. Hayes.
11 Case of Syphilis (Syphilis D'Emblee) without a Primary Chancre. A. C. Maglan.
12 *Very High Specific Gravity of the Urine in Healthy Women. H. French.
13 *Partial Gastrectomy for Gastric Carcinoma: Recovery. H. B. Robinson.
14 Viper or Adder Bite (Vipera Berus). R. S. C. Edleston.
15 The Superficial and Deep Reflexes. J. M. MacCormac.
16 Somatic Delusions and Local Lesions. C. A. Mercier.
17 Heredity in Causation of Inebriety. T. D. Crothers.
18 Mongolian Imbecility. G. E. Shuttleworth.
19 Report of the Royal Commission on the Care and Control of the Feeble Minded. W. R. Dawson.
20 The Present Position on Medical Psychology. A. T. Schofield.
21 The Skeleton in Achondroplasia. A. F. Dixon.
22 Points in the Mechanics of Respiration. R. H. Scanes-Spicer.
23 Phosphatides in the Light of Modern Research. H. MacLean.
24 Deep Afferents: Their Function and Distribution. C. S. Sherrington.
25 Reconstruction Models of the Fetal Pelvis. D. Waterston.
26 Reply to Certain Criticisms of Observations on the Effects of Inhalation of Oxygen on Muscular Exertion. L. Hill.
27 The Structure of the Pancreas in Relation to Function. J. S. Goodall and H. G. Earle.
28 The Biochemistry of Hemolysis. B. Moore.
29 Development of the Heart. P. Thompson.
30 Distribution of the Intercostal Nerves. H. M. Johnston.
31 Features that Make for Persistence. R. J. Anderson.
32 Results of Uniformity of Action and Habit. R. J. Anderson.
33 The Cervical Pleura. J. S. Dickey.
34 The Chondro-Cranium of the Trout with Reference to the Brain and Cranial Nerves. N. C. Rutherford.
35 Discharge of Sewage Effluents into Tidal Water. H. O'Neill, E. A. Letts, and T. Carnwath.
36 Measles in Schools: An Account of a Recent Epidemic in St. Helens. J. J. Paterson.
37 Prevention of Tuberculosis in Cattle. J. Niven.

8. **Surface Signs in Deep-Seated Disease.**—Isaac claims that cutaneous hyperesthesia is of considerable value in the diagnosis of acute ulceration of viscera; that the neuromuscular reaction is of some value in the diagnosis of inflamed viscera; that myotatic irritability is by no means a negligible quantity; and the suggestion that there is a neuropigmentary sign in the skin of visceral disease proves that the question of superficial evidence of deep-seated disease is a far larger one than it at first seems, and offers considerable scope for both observation and research.

12. **High Specific Gravity of Urine in Healthy Women.**—On examination of 150 healthy nurses French found that a specific gravity even up to 1040 is by no means necessarily an evidence of ill-health in a woman. In the earlier cases it must be thought that there must be some error in the recording instruments; but this source of fallacy was excluded by the use of several different urinometers, each of which was tested separately; all recorded similar results for the same urine.

13. **Partial Gastrectomy for Carcinoma.**—The growth in this case was very limited, and the glandular involvement slight. This permitted removal of both with a fairly wide margin. The section of the stomach corresponded pretty well with the incision used by Mikuliez—that is, from just to the right of the cardiac orifice almost vertically downward to the greater curvature. The glands were rather soft and did not suggest involvement. An end-to-end junction after Billroth's method was used, as the cut edges could be easily brought into apposition. No trouble was experienced from leakage, the occurrence of which had led to the advocacy of other methods. The character of the growth was a colloid carcinoma. The man has been frequently seen since the operation, July 8, 1908; he has put on weight and remains free from symptoms.

Medical Press and Circular, London

September 1

38 Feeble-Minded Children. A. F. Tredgold.
39 Antigens, Antibodies and the Fixation Reaction or Deviation of the Complement. Prof. Chantemesse.
40 Visceral Syphilis. W. B. Washington.
41 The Inoculation Accident in Manila, Philippine Islands. W. M. Haffkine.

September 8

42 *Educational Number.

42. **Educational Number.**—This issue is devoted entirely to medical education.

Clinical Journal, London

September 1

43 Disorders of the Cerebral Circulation and their Clinical Manifestations. A. E. Russell.
44 *The Nature and Treatment of Surgical Shock. J. D. Malcolm.

44. **Treatment of Surgical Shock.**—Malcolm believes that the true explanation of the vascular changes of shock is that they depend on an exaggeration of the physiologic action by which stimulation of sensory nerves causes increased vascular and cardiac muscular efforts. This at once raises blood-pressure in the large arteries and lowers it in the small arteries. The lowering extends to the larger vessels in proportion to the degree of irritation. The heart is at first increased in power. Later it becomes relatively weak and its pace hastens. Its relaxation in diastole becomes so limited that it cannot take from the veins a normal quantity of blood and its output is therefore diminished; consequently the venous system becomes engorged, serum escapes from the vessels and from the body, and, if the action is sufficiently prolonged and severe, blood is almost certainly destroyed as in a fever. Thus the amount of blood in the body diminishes, and in fatal cases death is caused by a shutting-off of the blood-supply from the nervous centers. If recovery occurs, when relaxation takes place there is a marked disproportion between the diminished quantity of the blood and the vascular capacity, and therefore there is much danger from the collapse frequently observed in conditions of anemia. Therefore treatment should be directed to relaxing the vessels as shock develops and to filling them up as soon as relaxation begins. Vasoconstrictors should not be given, and attempts to dilate the vessels rapidly and forcibly should not be made. Vasodilators are indicated, but these may induce an even more dangerous condition if fluids are not at the same time supplied to fill the relaxing vessels. Complete quietude, especially in the early stages of recovery, is necessary to prevent collapse, and of course, the patient should be kept warm and recovery from the anesthetic must be attended to. The patient should not be drained of fluid by preliminary treatment, but, when time is available, this does not preclude attention to the condition of the alimentary canal, an overloaded state of which is so undesirable. All causes of weakness should be obviated as much as possible, and septic conditions should be anticipated by every means in our power.

Dublin Journal of Medical Science

August

45 Report on an Outbreak of Scarlatina in Lurgan. J. S. Darling.
46 Clinical Reports of the Rotunda Hospital (continued). E. H. Tweedy.
47 Acute Parotitis in Pneumonic Fever. Sir J. Moore.

September

48 *Valvular Disease of the Heart with Anomalous Symptoms. J. Little.
49 Hemophilia. J. E. M'Causland.
50 Clinical Reports of the Rotunda Hospital (continued). E. H. Tweedy.

48. **Valvular Disease of the Heart.**—A woman, aged 31, had been troubled with palpitation for six years. Her feet and legs had been somewhat swollen for two months, and her abdomen had become enlarged during three weeks before admission to the hospital. She was breathless on exertion, and felt very tight and uncomfortable in the upper part of the abdomen. The liver was manifestly swollen, and with distended jugulars pointed to overfulness of the right cavities of the heart. The day after admission to the hospital the legs were no longer swollen; the distention of the abdomen seemed due to flatulence, as a resonant note was produced all over it by percussion. The urine was free from albumin and fair in quantity. A loud systolic murmur was audible over the entire cardiac region and a diastolic murmur was at first to be heard along the sternum. When 6 years old, the woman had had scarlatina. From the first the patient had a symptom not usual in heart disease, except when rheumatism is actually present. She was nearly always bathed in perspiration. The application of six leeches over the liver gave relief to her feelings of oppression and to her breathlessness. Her temperature all this time was, as a rule, subnormal; the pulse varied between 80 and 90. At the end of a week a flatulent distention of the abdomen rather suddenly disappeared. At the end of a fortnight she was allowed up pre-

paratory to going home. In the third week, however, she became mentally affected; she would not speak; she refused her food, disliked to see her husband, and at night was sleepless and noisy. The influence of drugs was curious; a hypodermic of morphin made her excited; the 1/200 of a grain of hydrobromid of hyoscin distinctly quieted her; trional in a dose of 20 grains secured sleep. All this time the sweatings continued, and in particular she often awoke out of a troubled dream bathed in perspiration. Her temperature began to rise a little at the end of the third week. For three days it did not pass 99 F., then it rose to 100, then to 101.8, and the following day to 105 F.; two days later, on the day of her death, it fell to 102 F. A few hours before her death, though she took nourishment freely, she was pulseless; no murmur could be heard.

The body was opened twenty-eight hours after death. The pericardium was injected, and the heart weighed 1 pound 5 ounces. When the great vessels were severed, a quantity of perfectly fluid blood escaped. On opening the left ventricle, its walls were found greatly thickened, but its cavity was small. When water was poured into the aorta it did not escape through the valve, and when the finger was pressed against the valvules either from the aorta or from the ventricle, it encountered a dense calcareous and spiculated mass, which appeared as if it must have entirely closed the orifice of the vessel. The left auriculoventricular orifice would admit only one finger; the two portions of the mitral valve were welded together, and the ring which they formed was thickened. The left auricle was greatly dilated, and its coats were thickened. The right side of the heart presented somewhat similar appearances. The cavity of the ventricle was enlarged and its walls were thickened; the right auriculoventricular orifice with difficulty admitted the tips of two fingers, and the valvules forming the tricuspid valve were welded together just as those forming the mitral valve had been. There was nothing like septic endocarditis; the aortic valvules, instead of being eaten away by necrotic change, had been converted into calcareous structures.

Intercolonial Medical Journal of Australasia, Melbourne

July

51 *Experimental Pathology of Diabetes. G. A. Knight.
52 Adrenalin as an Emergency Treatment in Cyanid, Strychnin and other Forms of Non-Corrosive Poisoning. J. L. Jona.
53 Metallic Balance in Saline Aperients. W. A. Osborne.
54 *Curious Case of Antenatal Disease. W. H. Summons.
55 X-Rays in Treatment of Tuberculous Diseases. T. G. Beckett.

51. **Experimental Pathology of Diabetes.**—Knight fed animals (goats and rabbits) on food containing a very low proportion of fat, namely, bread 1 per cent., chaff 1.5 per cent., and young carrots 0.3 per cent. The animals thrived well, were killed after from three to seven days, and the amount of fat in the mucous membrane of the small intestine was estimated. In the case of goats, a quantitative estimation of the fat was made; also secretions of the intestine were examined under the microscope. In the case of the rabbits, sections were taken at different parts of the small intestine and examined for fat microscopically. A goat was fed for two days on white bread (1 per cent. fat). On the morning of the third day, the animal took a good meal of bread and water; five hours later it was chloroformed, bled by the carotid artery, and the abdomen immediately opened. The duodenum and small intestine were then removed from their mesenteric attachments. The first 6 feet of intestine contained 1.46 per cent. of fat, the middle 6 feet of intestine contained .982 per cent. of fat. Average, 1.2 per cent. of fat.

A goat fed on chaff for several days was starved for one day, then given a feed of chaff, five hours later was chloroformed, bled and the abdomen opened. The duodenum and small intestine were removed from the mesenteric attachment. First 6 feet of intestine (36 grams of mucous membrane) = .91 grams of fat—2.5 per cent. Third 6 feet of intestine (15.5 grams of mucous membrane) = .5 grams of fat—3.2 per cent. Fifth 6 feet of intestine (18.2 grams of mucous membrane) = 1.4 grams of fat—7.6 per cent. Seventh 6 feet of intestine (17.9 grams of mucous membrane) = .5 grams of fat—2.7 per cent. The mucous membrane of the intestine, therefore, averaged 4 per cent. fat.

Another goat was fed on chaff for three days, chloroformed, bled and four portions of intestine taken. First 6 feet of intestine contained 5 per cent. fat; third 6 feet contained 5.6 per cent. fat; fifth 6 feet contained 6.8 per cent. fat; seventh 6 feet contained 1.9 per cent. fat. Average 4.8 per cent. fat. If Pavy's theory that carbohydrate is converted into fat were correct, one would expect a much larger percentage of fat in the mucous membrane of the intestine, seeing that the animals were fed on a diet containing a low proportion of fat and a fair proportion of carbohydrate. In an attempt to prove or disprove the correctness of Pflüger's theory, Knight performed the following experiments: 1. Ligation of vessels between pancreas and duodenum, leaving duct intact. 2. Ligation of vessels, including duct and separation of pancreas from duodenum. 3. Extirpation of duodenum. 4. Cauterization of duodenum. Extirpation of the duodenum, and separation of the pancreas from the duodenum failed to demonstrate any glycosuria, while cauterization of the duodenum in one case only elicited a doubtful glycosuric condition. No experiments were done on the neurohepatic theory, but Knight points out that all conditions giving rise to a rise of blood pressure are liable to produce glycosuria.

54. **Antenatal Disease.**—The baby in Summon's case was born precipitately about fourteen days prematurely, and was a small child. Immediately after birth it was noticed that there was something wrong with the child's legs. There was no calcification in the femora, tibiæ or fibulæ. The feet appeared normal, also the pelvis. There was no trouble with the arms. The flat bones of the skull were deficient in calcification, but no crackling was present, the fontanelles being wide, and connected by a broad interparietal uncalcified space. The bones in the legs were so soft that they could be bent about like rolls of putty. On palpation, there was a crackling feeling, with irregularity and thickening, a feeling like that noted over subperiosteal hemorrhages. An important point noted was great tenderness of the lower limbs; the pain prohibited all voluntary movement of the legs. There was a large hemorrhage into the left side of the scrotum, and the urine was dark colored for two days after birth, producing dark stains on the linen. It was not decided that it contained blood. The legs were shorter than in a healthy child, owing to the deformity of the bones, but were otherwise normal.

The child was placed in a cardboard frame, with the legs suspended, and mercury was administered. Calcification has progressed irregularly, and great thickening and deformity may now be felt. The father states that there is no possibility of venereal disease. The mother, married young, was rather depressed during pregnancy, and had a prolonged bronchitis. She has never miscarried, and presents no evidence of scurvy.

Annales de Gynécologie et d'Obstétrique, Paris

August, XXXVI, No. 6, pp. 449-512

56 Negative Ocular Tuberculin Reaction in 500 New-Born Infants. M. Duverger.

Archives de Médecine des Enfants, Paris

September, XII, No. 9, pp. 641-720

57 *Exceptionally Large Doses of Diphtheria Antoxin in Malignant Sore Throat and Diphtheritic Paralysis. H. Méry and others.
58 *Leucemia in Infants. (La leucémie chez le nourrisson.) L. Babonneix and L. Tixier.
59 Two Cases of Fatal Diphtheritic Paralysis. J. Comby.

57. **Diphtheritic Paralysis.**—Méry states that 9 children succumbed to diphtheritic paralysis last year in his 622 cases of diphtheria; and 3 others died of the malignant sore throat without paralysis. Since then he has increased the dosage in such cases and the results have been much better. He reports 18 unusually severe cases in which the impending catastrophe was warded off by the repeated large doses of antitoxin, with 5 others in which the ordinary dosage was used, with fatal outcome. His experience confirms the value of this intensive antitoxin treatment in the unusually severe cases, keeping up the antitoxin during convalescence. While it did not prevent the development of paralysis entirely, yet the latter never appeared except in an attenuated form. Nothing suggesting

anaphylaxis and no disturbances from the antitoxin were observed in any instance. The daily dosage ranged from 40 to 60 c.c. for several days. Then, after the throat was clean, from 10 to 20 c.c. were given every day or second day. The antitoxin was given daily and the dose was increased if signs of paralysis appeared until some of the children had received over 500 c.c. of antitoxin, and all recovered. Méry affirms that there need be no fear of anaphylaxis on this dosage as that is the result of introduction of a small dose of antigen into an organism saturated with antibodies. When the antigen is supplied in large amounts, anaphylactic accidents do not occur as clinical experience has abundantly demonstrated confirming the theoretical premises. Even when the children showed signs of "serum disturbances" he did not hesitate to continue to inject more antitoxin, and the favorable outcome realized his anticipations.

58. **Leucemia in Infants.**—Babonneix and Tixier summarize from the literature 4 cases of congenital leucemia, 13 of lymphatic leucemia, including one from their own experience, 8 of myeloid and 3 of atypical leucemia, all in infants, some of whom were breast-fed. The leucemia developed between the first and second year in 13 of 21 cases; the majority were male infants. Death occurred within a few days in some cases. No treatment has been found effectual, but there is no record to date of Roentgen-ray treatment having been applied to an infant for leucemia.

Lyon Chirurgical, Lyons

September 1, II, No. 4, pp. 407-522

60 *Operative Treatment of Inflamed Inguinal Glands. (Extirpation des adénites inguinales inflammatoires.) L. Imbert.
61 *Surgical Treatment of Gastric Cancer. X. Delore and H. Alamartine. Commenced in No. 3.
62 Anatomic Conditions with Undescended Testicle. (Etude anatomique d'un cas d'ectopie testiculaire.) H. Muller.
63 *Resection of Cancerous Rectum by the Sacro-Coccygeal Route. A. Chalier.

60. **Inguinal Adenitis.**—Inflammation of the inguinal glands sometimes runs a subacute course which allows the individual to continue at work, but this retards spontaneous cure. The suppuration in these glands, Imbert states, occurs by a series of small independent foci in turn. The best treatment is by radical excision; this induces a complete cure and more rapidly than simple incision, even with curetting. His remarks apply only to simple inflammation, not of venereal or tuberculous origin. In his experience at Marseilles he has operated in this way in 21 cases, with satisfactory results, and he regards it as indicated whenever the tumor does not subside after a week in bed.

61. **Surgery of Gastric Cancer.**—Delore reviews the experiences in Poncet's service with 158 operations for gastric cancer, including 43 resections.

63. **Resection of the Cancerous Rectum.**—Chalier advocates the mode of access by resection of the sacrum and coccyx. The only means of disinfecting the rectum beforehand seems to be with superheated air at from 300 to 500 C.; a preliminary artificial anus is of great service. The upper stump after resection is invaginated in the sphincter stump, and is brought out and sutured to the skin outside of the anus; the various steps of the operation are shown in nine illustrations. It is important to retain sufficient vessels in the invaginated stump to insure against gangrene.

Lyon Médical, Lyons

August 22, XLI, No. 34, pp. 309-348

64 *Oxygen in Threatening Whooping Cough. (L'oxygène dans les coqueluches graves.) E. Weill and G. Mouriquand.

August 29, No. 35, pp. 349-388

65 Malted Gruels. (Alimentation par les farines de céréales et de légumineuses diastasées.) A. Imbert.
66 Visible Peristalsis of the Stomach. (Tension intermittente de l'épigastrium: "Magensteifung.") A. Mollière.

64. **Oxygen in Pertussis.**—Weill has used oxygen in treatment of threatening paroxysms in whooping-cough in thirty cases, and has found it a valuable aid in warding off bronchopneumonia and suffocation. The oxygen is given at each paroxysm; if possible, just as it begins. The cyanosis subsides and the child is relieved and keeps in good condition, with appetite, throughout. The oxygen renders the lung aseptic and thus may arrest incipient infectious processes. The oxygen must be used freely; at least 10 or 12 liters are necessary to control a paroxysm, and if there is danger of bronchopneumonia, the oxygen should be inhaled systematically every hour. It is best inhaled through a funnel during the paroxysm and can thus be given even while the child is asleep.

Presse Médicale, Paris

September 4, XVII, No. 71, pp. 625-632

67 *Laryngeal and Respiratory Disturbances and Ptosis of Heart and Diaphragm. (Troubles laryngés et respiratoires et cardiophrenoptose.) G. Scherb.
68 *Autoserotherapy in Pleurisy. (L'autosérothérapie pour activer la résorption des épanchements pleuraux.) Marcou.

67. **Respiratory Disturbances with Ptosis of Heart and Diaphragm.**—Scherb describes a case of movable heart with ptosis of the heart, diaphragm, liver and intestines, associated with phobias and obsessions involving the organs required for the patient's livelihood. The patient was a man of 53, a professional cathedral chorister, with an unusually powerful bass voice. In his singing he had evidently overstrained the respiratory organs, and about six years ago he suddenly felt intense pain in the region of the heart, and lost his voice with other symptoms of extreme ptosis of the diaphragm and heart. The sensations induced by the movability of the heart he interpreted in almost delirious fashion, resulting in an obsession of respiration and phobia of inspiration. The case shows the importance of seeking for some organic defect or displacement in every case of pathologic emotional disturbances. The importance of ptosis of the viscera in the pathogenesis of intermittent states of disturbance in the emotional sphere and will power is becoming recognized more and more. In this case, the explanation for the respiratory neurosis was found in the ptosis of the heart and diaphragm, this assumption being confirmed by the results of wearing a supporting band to hold the organs in their proper place. This put an end to the disturbing ptosis and the neurosis, and restored the chorister to the choir.

68. **Autoserotherapy for Pleural Effusion.**—Marcou makes a practice of exploratory puncture in every case of pleural effusion. If the fluid is free from pus he reinjects it directly again into the subcutaneous tissue through the same needle which is not withdrawn; the direction of the point is merely altered to bring it into the subcutaneous tissue. These autoserum injections are repeated at intervals of two or three days, the amount injected generally being from 1 to 5 c.c. He has made over 150 injections on 82 patients, and a number have been cured and under observation for three or four years. Adding those reported by Tchigaeff at St. Petersburg, by Dehio at Dorpat and others, this makes a total of 168 cases in which this treatment, first suggested by Gilbert of Geneva, has been applied to promote the absorption of pleural effusions with eminently satisfactory results, subjective and objective, immediate and remote. Marcou explains the benefit as due to the stimulation of formation of an antipleuritic substance by the injection of a product of the pleuritis. The formation of this antibody in the organism determines the rapid cure of the pleurisy. In most cases the pleural effusion is rapidly reabsorbed, but the causal affection continues its course. The most convincing cases are those with large effusions of recent date. Marcou is now encouraged to apply this same procedure in treatment of ascites. One advantage of this method is that there is much less danger of formation of adhesions and of retraction than when thoracocentesis is done. Most of his cases were in out-patients.

Semaine Médicale, Paris

September 8, XXIX, No. 36, pp. 421-432

69 *Physiologic Research on Application of Leeches. (Recherches physiologiques sur les applications de sangsues en clinique humaine.) P. E. Weil and G. Boye.
70 *Should Salt Food be Forbidden after Administration of Calomel? (Y a-t-il lieu de défendre les aliments salés après l'ingestion de calomel?) L. Gaucher and R. Abry.

69. **Physiologic Research on Effect of Application of Leeches.**—The use of leeches is generally decried nowadays as contrary to asepsis, and wet-cupping and similar measures are supposed to answer exactly the same purpose without the drawbacks of the leeches. Weil has been the pioneer in the treatment of hemophilia with injection of normal serum, and

in the course of his research in this line he had occasion to study the effects of application of leeches. He found that the phenomena observed are different from those with wet cupping. In the first place, with the latter a certain amount of blood is drawn, but as soon as the cup is removed the flow of blood ceases. With leeches, on the other hand, the blood continues to ooze after they are removed, until from three to six ounces escape in the course of a day or so. Girardet has even reported a case in which after application of two leeches the total amount of blood lost reached thirty-seven ounces. Weil's research has explained the reason for this. It has demonstrated that the leeches seem to introduce into the organism some special substance which induces an acute, transient, local hemophilia, resembling in many respects true general hemophilia such as is induced in rabbits by intravenous injections of extract of leeches. The blood in the region is rendered incoagulable and the leech-hemorrhage persists until an amount of blood may be lost comparable to that of a considerable venesection. Wet cups, on the other hand, have no such action on the composition of the blood. When a general blood-letting is desired, leeches should be given the preference, he declares, even over venesection, unless promptly vigorous action is required, as there is no disturbance from the general or local disturbances from them, and the minute wound they form is never accompanied by infection.

70. **Calomel and Salt in Food.**—A boy of 14 with an artificial anus in the upper half of the small intestine was given calomel and the chyme was taken from the fistula and mixed in test-tubes with sodium chlorid in conditions approximating those in normal intestinal digestion. The mass was examined for the presence of bichlorid of mercury at various intervals, the aim being to settle the question as to whether the ingestion of salted foods with calomel leads to the production of corrosive sublimate in the digestive tract. The findings were constantly negative.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIII, No. 3, pp. 245-437. Last indexed September 18, p. 980

71 *Effect of Tuberculin Treatment on Tuberculosis in Children. (Verhalten der kindlichen Tuberkulose gegen Tuberkulin.) Engel.
72 Processes of Immunization in Tuberculosis. (Das Komplementablenkungsverfahren, insbesondere in der Tuberkuloseforschung.) J. Bauer.
73 *Tuberculosis Immunity and Specific Therapy. J. Bauer and Engel.

71. **Tuberculin Treatment of Tuberculosis in Children.**—Engel devotes nearly 140 pages to the detailed report of the experiences with tuberculin treatment in the children's clinic at Düsseldorf. The principle followed was first to accustom the child to a large dose and then to continue to treat him with this dosage. The children are kept in bed at first and the temperature is taken in the rectum every two hours; the injections are made between the shoulder blades. The extent of the tuberculous process determines the reaction, independent of the age of the child. Typical child tuberculosis is distinguished by a great tolerance for tuberculin. The tendency to reaction grows less when the dose which was borne without reaction is repeated several times before increasing it. When the optional maximal dose is once determined, the children are treated afterward as out-patients, the injections repeated at intervals graduated to prevent too vigorous reactions. When the child tolerates 0.01 c.c. tuberculin the reaction to the v. Pirquet test usually ceases; this test may serve as a guide for the dosage of tuberculin. His experience shows, he asserts, that it is incorrect to speak of latent tuberculosis in children; the affection may be occult and non-localizable in a child, but it is never latent. When the process has spread beyond the lymphatics the prognosis is less favorable. An acute tuberculosis in apparently healthy children is generally merely the end of an occult process, and these processes should be combated by every means. In 8 children between 3 and 8 months old the tuberculous process was apparently arrested by the tuberculin in all but one, while the medication did not interfere with the development of the children. In one case the physical findings indicated an apical process, but the recovery under tuberculin showed that the process must have been restricted to the glands. He advocates tuberculin treatment in all cases in which the lungs are not involved. There also is a chance for benefit if the lung process is small with little tendency to progress, but progressive pulmonary tuberculosis contraindicates tuberculin and only discredits this method of treatment. The children thrive under the tuberculin. Fever does not necessarily exclude tuberculin treatment; small doses may even banish the fever. Fifteen curves are appended to show the dosage and progress of some of the little patients less than a year old.

73. **Immunity to Tuberculosis and Specific Treatment.**—Bauer and Engel state that the immune bodies are not found in the blood until after the children have been given comparatively large doses of tuberculin. Their experience indicates that 2 c.c. is the most favorable maximal dose. Regarding the antibody content of the blood as a favorable factor for recovery, they strive to keep it at its highest point, and found this was best accomplished by continuing with the maximal dose to support the curative efforts of Nature in conjunction with all other hygienic and dietetic factors. They are convinced that their experience with children offers a more rational basis for tuberculin treatment. Former studies of the subject have almost all dealt with tuberculous adults, while in children the local process is not so extensive. They are unable to offer direct proof of the assumed fact that the curative process is in direct relation to the antibody content in the blood. Proof of the parallelism between results in the test-tube and the process in the living organism can be obtained only by empirical observation of large numbers of cases over long periods.

Berliner klinische Wochenschrift, Berlin

September 6, XLVI, No. 36, pp. 1637-1676

74 Cobra Venom Hemolysis in the Insane. (Die Kobragifthämolyse bei Geisteskranken.) O. Pförringer and F. Landsbergen.
75 Suprarenal Tumor. (Ueber einen chromaffinen Tumor des Nebennierenmarks.) S. Suzuki.
76 Influence of Intravenous Saline Injection on Active and Passive Anaphylaxis in Guinea-pigs. E. Friedberger and O. Hartoch.
77 *Dental Surgery. (Einige Fälle aus der technischen Zahnheilkunde.) Warnekros.
78 Importance of the Wassermann Reaction for Treatment of Syphilis. Blanck.
79 *Tetanus from Catgut. R. Kleinertz.
80 Determination of Hemochromogen Crystals. (Neue und beste Methode zur Erlangung der Hämochromogenkristalle.) A. de Dominicis.
81 *Treatment of Rectal Prolapse. (Zwei Fälle von Rektumprolaps.) C. Goebel.
82 Symmetrical Enlargement of the Parotids. (Symmetrische Parotisschwellung.) Id.
83 Reform in Administration of Insane Asylums. (Zur Standesfrage der Irrenanstaltsärzte.) F. Hoppe.

77. **Dental Orthopedics.**—Warnekros reports some cases in which with the aid of dentistry methods satisfactory substitutes for large parts of the jaw were provided. In one case of bilateral luxation of the lower jaw, irreducible for sixteen years, good functional results were attained by dividing and resecting the jaw, the parts being held in place with a dental appliance until healing was complete. In another case the patient was unable to close his teeth properly and this also was remedied by resection and a celluloid dental splint appliance. The cooperation of the surgeon and dentist is especially valuable, he adds, in treating cleft palate, and cites some examples to illustrate this. He declares that in fully 75 per cent. of all cases caries is the result of defective or lacking articulation of the separate teeth involved. The loss of even a single tooth throws the chewing mechanism out of gear, imposing more work on some parts of the gum than others, while the shrinking of the gum disturbs the harmony of the projecting gum, etc., that protects the teeth, cheeks and tongue against injury. He advises prompt substitution of a lost tooth as the best means of prophylaxis against alveolar pyorrhea.

79. **Tetanus from Catgut.**—Kleinertz tabulates 33 cases, reports of which have been published in German medical literature alone. In 3 "cumol catgut" had been used, in 3 catgut prepared by the Hofmeister formalin technic, in 3 by the Saul and 2 by the Bergmann technics. The outcome is not known in a number of cases, but recovery is mentioned in only 2 and death in 17. The methods and scrupulously aseptic technic, from the first, of antitoxin production should be applied to the preparation of catgut instead of the usual haphazard methods before the actual sterilization.

81. **Rectal Prolapse.**—In the first case a Thiersch ring was applied, and after failure at first and recurrence in a few months, a renewed application of the ring induced a permanent cure. The ring was also used in a second case, accompanied by resection by the Mikulicz technic, with satisfactory results. Piqué has reported 27 cured out of 33 patients treated with the Thiersch silver wire ring. Scraps of wire may be eliminated later, but the desired purpose is accomplished before this can occur, cicatricial tissue developing and preventing recurrence of the prolapse. Goebel remarks that the different prolapse operations are not accurately estimated to date, as too many cases are reported before sufficient time has elapsed for the definite outcome to be known.

Centralblatt für die Grenzgebiete der Medizin und Chirurgie, Jena

September 3, XII, No. 16, pp. 609-640

84 *Treatment of Neuralgia by Deep Injections of Alcohol. J. Flesch. Commenced in No. 15.

84. **Deep Injections of Alcohol in Treatment of Neuralgia.**—Flesch reported last July 25 cases in which success almost invariably followed the application of deep alcohol injections. He here reviews 63 other communications on the subject, and describes the three methods in vogue. Flesch adds his commendation to those of the other writers, having found the peripheral deep injections reliable and only slightly painful, while they have the further advantage that they can be repeated as often as is necessary. Kiliani has reported 47 patients cured by peripheral or central alcohol injections in 55 thus treated, the neuralgia having resisted the other usual measures for from one to twenty years. The articles on the subject in THE JOURNAL a year or so ago are summarized with considerable detail.

Deutsche medizinische Wochenschrift, Berlin

September 2, XXXV, No. 35, pp. 1506-1552

85 Systolic Functional Heart Murmurs. (Systolische funktionelle Herzgeräusche.) S. E. Henschen.
86. Aërated Bath Water. (Ueber Luftperlbäder.) H. Senator.
87 Conception of Disease. (Bemerkungen zu dem Aufsatz Aschoffs "Ueber den Krankheitsbegriff.") H. Ribbert.
88 Roentgen Ray Diagnosis of Changes in Position and Shape of the Stomach. (Zur Diagnostik von Lage- und Formveränderungen des Magens mittels des Röntgenverfahrens.) E. Schlesinger and F. Holst.
89 Guaiac Test for Blood in Stools and Sources of Error. (Ueber den chemischen Nachweis von Blut im Stuhl mittels der kombinierten Terpentin-Guajak- und Aloinprobe mit besonder Berücksichtigung der dabei vorkommenden Fehlerquellen.) A. Ohly.
90 Regular Appearance of Tuberculin Antibodies in Course of Specific Treatment and their Significance from Therapeutic Point of View. (Ueber das gesetzmässige Auftreten von Tuberkulin-Antikörpern im Laufe der spezifischen Behandlung. M. Pickert.
91 Testing Heart Functioning. (Zur Prüfung der Herzfunktion.) E. Homberger.
92 The Tschernugobow Modification of the Wassermann Reaction. A. Stühmer.
93 Two Cases of Torsion of the Omentum. (Zur Frage der Netztorsion.) G. Seefisch.
94 The Physiologic Osteoid in the Fetus and New-Born Infant and its Importance for the Histologic Diagnosis of So-called Congenital Rachitis and Syphilitic Osteochondritis. E. Wieland.
95 Connection Between Infection and Flatfoot. (Beziehungen zwischen Infektion und Plattfuss.) J. Lewy.
96 Means to Prevent Conception. (Eine Mittel zur Verhütung der Konzeption.) R. Richter.

Medizinische Klinik, Berlin

August 29, V, No. 35, pp. 1291-1338

97 *Treatment of Diabetes. C. v. Noorden.
98 *Methods of Examining Sputum. (Neuere Methoden der Sputumuntersuchung.) P. Uhlenhuth.
99 Physical Factors in Pathology. N. P. Tendeloo.
100 Tuberculides. (Zur Aetiologie und Klinik der Tuberkulide.) E. Finger.
101 *Visible Gastric Peristalsis. (Zu äusserlich sichtbaren Magenbewegungen.) S. Laache.
102 *Gastric Mucosa in Pernicious Anemia. (Magenmukosa bei perniziöser Anämie.) S. Talma.
103 *Gastric Achylia with Anemia. K. Faber.
104 *Universal Asthenia. (Der Morbus asthenicus.) B. Stiller.
105 Oxaluria. (Bedeutung und Behandlung der Oxalurie.) H. Salomon.
106 New Needle and Technic for Deep Suturing. (Eine neue Methode zur Nahtanlegung in tieferen Körperteilen mit einer neuen Nadel.) I. Kubo.
107 *Arteriosclerosis. (Allgemeine Betrachtungen über die Arteriosklerose.) H. Huchard.
108 The Cortical Retina. (Ueber inselförmige Vertretung der Makula in der Sehrinde des Gehirns.) S. E. Henschen.

September 5, No. 36, pp. 1339-1376

109 *Flatulence. E. Schwarz.
110 *Value and Practical Importance of Serodiagnosis of Syphilis. Grosser.
111 *Permanent Hypertonicity of the Blood Vessels. (Permanente Hypertonie.) J. Pal. Commenced in No. 35.
112 Hot Water Treatment. (Die Heisswasserbehandlung in der Dermatologie.) C. Rosenthal. (Sensibilitätsstörungen und Heisswasserbehandlung.) A. Stern.

97. **Treatment of Diabetes.**—In this review of his own experience v. Noorden expatiates on the great progress realized in adapting the diet to the individual tolerance of the patient. His experience includes about 3,000 cases of diabetes during the last fourteen years, and with careful individualization the prognosis of the disease has been materially improved. Several hundreds of his patients under observation for more than seven years have been kept free from glycosuria by changing their diet occasionally, according to the metabolic findings, and they are all now in good health, free from any complications. Most of them must still be regarded as diabetics, as any carelessness in taking too much carbohydrate would certainly bring on the glycosuria again. He is waiting for the completion of the twentieth year to publish a thorough analysis of his experiences. Of course, it is impossible to keep the diabetes under control in every case. This is due in part to the malignancy of the process affecting the pancreas, but it is especially remarkable that in the cases with a rapid course, for example, in children and in young people, it is often impossible to detect any structural changes in the pancreas. Under the age of 30, glycosuria may occur for a time and then completely subside; he has observed this after acute infections; but when the diabetes appears in the form of severe glycosuria, persisting in spite of change of diet, with considerable amounts of ketone bodies, the prognosis is almost invariably very grave. The same occurring in older persons is of much less serious import, and he has several hundreds of elderly patients who have been kept free from glycosuria for more than five years and are in excellent general health and strength on their careful and regulated diet. These cases are much more numerous than is generally supposed, while in the young this form is extremely rare. Everything depends on the systematic dietetic measures being instituted early. The whole future of the diabetic is determined by the management of the case during the early stages, except in the really malignant cases. It is difficult to persuade the diabetic of the necessity for energetic measures during this early stage, for the disease has an especially dangerous deceptive property of leaving the general health unimpaired for several years and this is a constant temptation to disregard the needed precautions. In nearly every case the glycosuria occurs transiently at first, and is explained as a harmless alimentary or nervous phenomenon, but these so-called transient glycosurias become transformed later, if neglected, into true progressive diabetes. Not until every case of glycosuria receives the attention it deserves, and not until every diabetic has his diet regulated to conform to the individual indications, will the patients share in the benefit which is possible with appropriate dietetic therapy. Not until then will it become generally recognized that the prognosis of diabetes can become far more favorable than is the case at present with the ordinary routine measures.

98. **New Methods of Sputum Research.**—Uhlenhuth calls special attention to the antiformin method. This is a mixture of a solution of potassium hydrochlorite (Javelle water) with sodium hydrate. The proportion of alkali is 7.5 per cent sodium hydrate, and on the addition of the acid 5.3 per cent. chlorin is liberated. This mixture is so powerful that it dissolves bristles, horse hairs, insects and beetles in half an hour; wool and silk are also dissolved, but cotton and wax are unchanged. Bacteria are dissolved in five minutes in a 5 per cent. solution. Neither of the ingredients has this effect alone. The action of antiformin on scraps of iron is most remarkable; they assemble to form tree-like masses. Tubercle bacilli alone are not affected and the advantages of such a fluid for examination of sputum are evident. The bacilli are cleaned at once of mucus, etc., while their staining properties are not impaired. On the other hand, this exceptional resistance of the tubercle bacillus to a chemical that almost instantly destroys and completely dissolves all other microbes, shows that there is little hope of influencing these bacilli in the body by therapeutic means; the only hope is in preventing their invasion of the body. The secret of control is in prophylaxis.

101. **Visible Peristalsis of the Stomach.**—Laache reports three cases with an illustration of one in which the intermittent stiffening and protrusion of the stomach were so violent that they could be readily watched. Such a phenomenon indicates stenosis of the pylorus, and he thinks it should be accepted as an indication for immediate gastroenterostomy. This gave good results in two of the cases and Buchholz has reported similar cases.

102. **The Stomach Mucosa in Pernicious Anemia.**—Talma reports the case of a farmer of 28 who succumbed to pernicious anemia after symptoms for eight years. The findings in the stomach indicated a reactive secondary inflammation, probably the result of poisons generated in the intestines. Talma does not regard this stomach disturbance as primary.

103. **Gastric Achylia with Anemia.**—Faber states that out of 125 cases of chronic gastric achylia 12 of the patients presented progressive pernicious anemia. Besides this group there were a number of young women with gastric achylia accompanying anemia which persisted for years uninfluenced by therapeutics. In one case iron was given for three years with only slight transient benefit. He regards this as a special form of anemia plus achylia distinguished by its protracted course and resistance to therapeutic measures. The blood findings are different from those in pernicious anemia; in the latter, the anemia seems to be due to the destruction of the blood. In the group in question the anemia was of the same type as in chlorosis and in secondary anemia from cancer, hemorrhage and the like.

104. **Universal Asthenia.**—Stiller ascribes uniformly to the "morbus asthenicus" what has hitherto been regarded separately as the "anatomic predisposition to tuberculosis," wandering kidney, gastroptosis, nervous dyspepsia, etc. All these, he declares, are merely the various manifestations of the constitutional asthenia which is not a clinical curiosity, but is encountered on every hand. Neurasthenia is an integral element of this asthenia and the latter provides the most favorable soil for certain other affections. Most striking is its genetic connection with pulmonary tuberculosis. Not every asthenic becomes tuberculous, but nearly every tuberculous patient bears not only all or most of the features of the universal asthenia, but also its most special stigma, the floating tenth rib. The dyspepsia of the tuberculous is merely the nervous dyspepsia peculiar to the asthenia. Chlorosis and gastric ulcer show a predilection for "asthenics," as also orthostatic albuminuria and a certain form of mitral stenosis which he has encountered in young women and girls. On the other hand, asthenia seems to be antagonistic to certain other affections, including typhoid, obesity, gout, chronic rheumatism, nephritis and certain heart and vascular affections. These are only rarely encountered in this congenital asthenia. The latter is the most frequent and most predominant of all constitutional affections, and represents the most universal morbid predisposition. It is not restricted to a single organ, but involves all the organs in the body. It is distinguished above all others, besides, by the fact that it has its own "habitus" and its own stigma, and these anatomic signs reveal in the child the predisposition to certain diseases, and this warning permits prophylactic constitutional preventive therapy.

107. **Arteriosclerosis.**—Huchard has investigated the causes of the arteriosclerosis in 2,680 out of 15,000 cases personally observed, and lists them according to their relative frequency and importance as gout, uricemia, the food, syphilis, tobacco poisoning, worry, mental overexertion and alcohol. He reiterates that the abuse of meat in the diet is a powerful and frequent cause of arteriosclerosis as it fills the body with poisons which have an elective action on the arteries, causing contraction, with consequent hypertension. This intoxication is early revealed by a very important symptom which he calls toxic alimentary dyspnea. It rapidly subsides when the ordinary diet is changed to milk and vegetables, which is the basis of the treatment. The mere restriction of meat in the diet puts an end to the disturbances, confirming the theory that this dyspnea, formerly called cardial or aortic dyspnea, is in reality due to the food.

109. **Flatulency.**—Besides dietetic measures and exercise, Schwartz ascribes great importance to massage of the abdomen in treatment of habitual flatulence—energetic massage with rather long sittings—attributing the benefit to the stimulation of the venous circulation. Purgatives should be used only in emergencies. Charcoal and ethereal oils sometimes benefit, although this is not the rule. With a tendency to flatulence there are generally signs of interference with the abdominal circulation, some enlargement of the liver or signs of beginning arteriosclerosis, which explain the benefit from massage of the abdomen. Cardiovascular affections also induce a tendency to flatulence from this same cause. It is also liable to occur with cirrhosis of the liver before the stage of ascites is reached. A sedentary occupation and lack of exercise are important factors in inducing sluggishness in the abdominal venous circulation with its consequent defective absorption of gases and resulting flatulency. The cardiovascular system should be carefully examined as the first step in treatment or the measures advised for the flatulency are liable to overstrain a weakened heart.

110. **Serodiagnosis of Syphilis.**—Grosser reviews the literature and his own experience with 300 cases, his conclusion being that the Wassermann reaction must not be rated too highly as a guide for treatment, but that positive findings are important in diagnosis. A persisting positive reaction, notwithstanding vigorous specific treatment, raises the question whether the infection in these cases is peculiarly resistant to mercury. The reaction is tenaciously positive in hard drinkers, and the manifestations of the syphilis in such individuals are also peculiarly rebellious to specific treatment. A positive reaction during a latent phase of syphilis generally justifies a new course of treatment and a negative reaction suggests frequent repetition of the test for a decisive conclusion. He reiterates that the nature of the reaction is still a mystery, but it is evident that it is not strictly specific.

111. **Isolated Permanent Contraction of the Vessels as a Morbid Entity.**—Pal declares that a stable contraction of the vessels with consequent hypertrophy of the heart may occur not only as a secondary phenomenon, but as an independent morbid condition. When the arterial pressure becomes high and stays high for a few hours or days, but then subsides to normal, the high tension or "pressory vascular crisis," as he calls this condition, resembles in every respect the acute high tension induced in experiments on animals by direct stimulation of the nerves or by the action of some toxic substance. Frequently recurring increased pressure may in time induce a permanently high tension. This condition of permanent high pressure may be a secondary symptom with parenchymatous nephritis, secondary contracted kidney and atherosclerosis. But in many other cases it may be the primary and basal affection, especially in certain cases suggesting atherosclerosis and in true contracted kidney. This group deserves study as a morbid entity, both from the standpoint of etiology and pathogenesis. Huchard calls this condition of high pressure and consequent hypertrophy of the heart the "stage of presclerosis," and von Basch styles it "angiosclerosis." Chronic nephritis and arteriosclerosis are generally, but not invariably, accompanied by this increased pressure so that the connection between them and the high pressure is still a problem. Pal makes a point of systematically recording the arterial pressure in every case of nephritis and comparing these records with the post-mortem findings. The maximal pressure cannot serve as a basis for estimation of the condition, only the basal pressure. There is no direct connection between the degree of pressure and the nature or intensity of the kidney process. The figures are highest with contracted kidney, but these findings are unable to differentiate a true from a secondary contracted kidney. A permanent high pressure is much rarer with arteriosclerosis than generally assumed. Very high pressure is observed at times, but this represents merely a vascular crisis which subsides sooner or later. Albuminuria may be encountered during or following it, but this may indicate merely insufficiency of the right heart, venous stasis, in consequence of the high pressure. Autopsy in a number of such cases suggesting apparently "arteriosclerotic kidney," revealed merely congestion, but no other changes in the kidney, although the arteriosclero-

sis and the hypertrophy of the heart were pronounced. Such cases confirm the assumption that the kidney is not responsible for the high arterial pressure, but that some other cause must be sought. In other cases sclerosis of the coronary arteries was the only manifestation of the arteriosclerosis which had induced permanent high tension and extreme dilatation of the heart, especially of the left ventricle. In other cases slight atherosclerosis of the aorta and brain vessels was accompanied by extremely high arterial pressure, and yet the kidneys and their vessels proved to be intact, even under the microscope. In arteriosclerosis slight increased pressure has been the rule in his experience, but even pronounced low pressures have been encountered. All the data presented indicate that arteriosclerosis develops under various conditions. It may be localized or diffuse, but there is nothing to sustain the assumption that it necessarily depends on the contraction or relaxed condition of the vessels. In a case cited in detail, a woman of 42, with permanent high pressure and much hypertrophy of the heart, with signs of mitral insufficiency, developed albuminuria and headache ascribed to the arterial stasis in the brain, the whole syndrome suggesting impending acute uremia, but nothing could be discovered in the vessels at autopsy to explain the high arterial pressure which had persisted during the year and a half the patient was under observation. The kidney was intact except for stasis congestion, and the increased pressure with the consequent hypertrophy of the heart and insufficiency of the right heart must have been the result merely of contraction of the peripheral vessels. This excessive contraction may have been the result of addiction to alcohol or the effect of an adenoma found in one suprarenal. The case is instructive as showing that extremely high arterial pressure may exist in the absence of morbid changes in the kidneys and of an anatomic substratum in the vessels themselves.

Therapeutische Monatshefte, Berlin

September, XXIII, No. 9, pp. 463-518

113 *Mammary Tumors. (Tumoren der Brustdrüse und ihre Chirurgische Behandlung.) P. Bockenheimer.
114 Coryza in Infants and its Complications. (Der Schnupfen der Säuglinge.) O. Aronade.
115 *A Plea for Ample Gratuitous Supply of Quinin, Mercury, etc., as the Prophylaxis of the Future. (Die Rolle der unentgeltlichen oder zu billigem Preise erhältlichen Arzneimittel in der Bekämpfung einiger Krankheiten.) B. Galli-Valerio.
116 Treatment of Granulating Wounds with Scarlet-Red Salve. (Behandlung granulierender Wundflächen mit Scharlachrotsalbe.) G. Morawetz.
117 Utilization of Pawlow Fistula into the Intestine for Pharmacologic Research Purposes. (Die permanente seitliche Darmfistel eine Methode zur Untersuchung des Schicksals und der Wirkung von Arzneimitteln im Magen-Darmkanal.) A. Bickel.

113. **Tumors of the Breast.**—Bockenheimer discusses various benign and malignant tumors, remarking that over 80 per cent. of mammary tumors are malignant according to the records to date. He reviews his experience and states that radiotherapy, fulguration and injections of certain fluids may cause the tumor to subside, but it continues its growth in the depths. Recent statistics have shown fully 30 per cent. permanently cured three years after excision. The main point is an early diagnosis and prompt excision.

115. **Free Drugs in Prophylaxis of Disease.**—Galli-Valerio emphasizes the great forward stride that would be realized in prophylaxis if all with malaria, syphilis, cretinism and typhoid could receive free an ample supply of the drugs and disinfectants required to cure and prevent infection of others.

Therapie der Gegenwart, Berlin

September. L, No. 9, pp. 409-456

118 *Symptomatology and Puncture of Pericardial Effusion. (Zur Symptomatologie und Punktion der Exsudate des Herzbeutels.) W. Zinn.
119 *Action of Saliva on Secretion of Gastric Juice. (Wirkung des Mundspeichels auf die Magensaftsekretion.) E. Fricker.
120 *Present Status of our Knowledge of Brain Tumors. (Der gegenwärtige Stand unserer Kenntnisse vom Hirntumor.) L. Jacobsohn.
121 *The Kitchen in the Modern Sanatorium. (Die Küche in der modernen Heilanstalt.) W. Sternberg.

118. **Pericarditis with Effusion.**—Zinn pleads for more general adoption of puncture in pericarditis with effusion as a simple and reliable measure in general practice. He reviews the symptoms of pericarditis as he encountered them in over 130 cases. About 1,000 cases of acute articular rheumatism have been treated in the Bethanien Hospital at Berlin, and pericarditis was observed in 10 per cent. and endocarditis in 25 per cent. In the 100 cases of rheumatic pericarditis friction sounds were noted in 50 per cent.; in 14 there was a slight effusion besides the friction and in 35 per cent. the effusion was moderate to excessive. In pericarditis of other origin there were friction sounds or no symptoms in about two-thirds and an effusion was evident in less than one-third. In 47 cases with very much effusion the symptoms did not compel intervention in 16, but puncture was required in 25. In some of the cases the pericarditis was the first sign of the rheumatic infection and typhoid was suspected at first. All the patients in this category recovered. In case of a large effusion neighboring organs may be interfered with; in one case there was permanent recurrent paralysis, in another acute mediastinitis. Other cases show that pericarditis without effusion may occur as a primary process. Roentgen examination is sometimes useful. When puncture is indicated by threatening symptoms or by lack of any tendency to absorption of a large effusion, the best point to introduce the trocar is where the largest mass of the effusion is found and that is the fifth or sixth interspace on the left, outside of the nipple line, where there is dulness, but no friction sound nor pulsation. He makes an incision in the skin under local anesthesia, after which the puncture is made rapidly and easily and the effusion is siphoned out without aspiration. He has thus withdrawn from 80 to 300 or once even 700 c.c., but states that sometimes withdrawal of a small amount is enough to start the resorption of the rest. In case of much dilatation of the left ventricle, or adhesion of the pleural or pericardial sheets, it may be advisable to make the puncture on the right side of the sternum.

119. **The Action of the Saliva on the Secretion of Gastric Juice.**—Fricker reports a series of researches which he undertook in his own person, the results confirming the assumption that the act of chewing promotes the secretion of gastric juice, as also the arrival in the stomach of saliva, which seems to have a specific stimulating influence on the secretion of gastric juice.

120. **Brain Tumors.**—Jacobsohn gives the details of 10 cases of tumor in the brain, discussing the symptomatology in general.

121. **The Kitchen in the Modern Sanatorium.**—Sternberg discusses the arrangements by which the food can be served palatable, hot and freshly prepared, not warmed up, and he thinks that the sanatoriums can learn from hotels in this respect. He insists that fine grinding is often more important than the chemical constituents of the food. Large mortars and extremely fine sieves are important factors in the preparation of easily digestible foods. The aim should be to make a dish that melts in the mouth like fine grades of candy. The sanatorium kitchen should be provided with apparatus similar to that used in high art cooking and confectionery. His arguments to sustain these assertions were mentioned in THE JOURNAL, April 10, 1908, page 1219, and July 18, page 266.

Zentralblatt für Chirurgie, Leipsic

September 4, XXXVI, No. 36, pp. 1225-1256

122 *Cure of Prolapse of Rectum by Systematic Tamponing of Retrorectal Space. P. Sick.
123 *An Adjustable Drill for Extension of Bones. (Ein zerlegbarer Bohrer zur Extension am Knochen.) E. Becker.

122. **Treatment of Prolapse of the Rectum by Tamponing.**—Sick expatiates on the advantages of tamponing in treatment of prolapse of the rectum. An incision is made between the tip of the coccyx and the circular sphincter fibers, through the superficial fascia into the loose connective tissue behind the rectum. There are no vessels, muscles or nerves to be injured at this point. The rectum is then detached up to the promontory, as for resection, tamponed with a little gauze, and a strip of medicated gauze, folded four or six times is introduced. The incision 2 or 4 cm. long is closed with plaster or collodion. The tampon is removed as after a nephropexy in one or two weeks, but not until after the second or third week

should the patient be allowed to defecate seated. This technic is especially applicable for children, and he thinks it is much superior to the Ekehorn technic, which he declares is neither simple, harmless nor promising of permanent results.

123. **Drill for Extension of the Bone.**—Becker has been trying to perfect the technic of applying extension directly to the bone itself. He inserts a drill from both sides, these meet and lock in the center, while the outer ends fit into plates from which the weights are suspended. The drill is worked with an electric motor.

Zentralblatt für Gynäkologie, Leipsic

September 4, XXXIII, No. 36, pp. 1249-1280

124 *Conservative Operations for Myoma. W. Rubeska.
125 Influence of Delivery on the Levator Ani Muscles and the Operation for Prolapse. L. Heidenhain.
126 Familial Occurrence of Typical Menstrual Flow during Pregnancy. E. Vogt.
127 Operative Treatment of Complicated Retroflexion of the Uterus. (Pfannenstiel'scher Schnitt mit Verkürzung der runden Mutterbänder nach Alexander-Adams.) P. Brose.
128 Extrauterine Twin Pregnancy. (Zwillingsschwangerschaft mit heterotopem Sitz der Früchte.) A. Leo.

124. **Conservative Myoma Operations.**—Rubeska performed a conservative operation in 9 out of 91 abdominal operations since 1896. Only 1 of the women has not borne 1 or more children since without mishap. In 3 cases the myoma grew again compelling hysterectomy, but each woman had borne a healthy child in the interim of 7 or 5 years.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 31, XXX, No. 104, pp. 1097-1104

129 *The Temperature Equivalents in Malaria. (Gli equivalenti termici dell'infezione malarica.) G. Trincas.

September 2, No. 105, pp. 1105-1112

130 *Dosage of Quinin in Malaria. (La somministrazione del chinino nella malaria.) G. Palumbo.

September 5, No. 106, pp. 1113-1128

131 Lime Metabolism and the Parathyroids. (Metabolismo del calcio e paratiroidi. Preteso antagonismo fra tiroide e paratiroidi.) Silvestri.

129. **Apyretic Malaria.**—Trincas declares that malaria should be defined as an infection which is frequently but not necessarily always accompanied by fever. There may be other phenomena taking the place of the fever, and these thermic equivalents, as he calls them, may be exceptionally serious. In the last year or so cases have been reported in which apyretic malaria induced paroxysms of kidney colic or of facial paralysis, aphasia or hemiplegia; in one case attacks of sciatic neuralgia occurred until the febrile paroxysms developed, after which the sciatica did not recur. In these apyretic cases of malaria differentiation is possible only by microscopic examination of the blood or the prompt cure under quinin.

130. **Administration of Quinin.**—Palumbo thinks that the prevailing methods of giving quinin fail to answer their purpose quite so fully as desired; the aim should be to have the blood saturated with the drug just at the time the attack is expected. He accomplishes this by giving the usual dose of 1 gm. fractioned in five doses, the last being taken just two hours before the anticipated attack. The same amount is taken on the day between the attacks, and after they have subsided he continues with smaller amounts for a few days. In 5 of his 120 cases the malaria was of the apyretic form, the attacks taking the form of trigeminal or intercostal neuralgia, recurring according to the tertian type, and all cured by two applications of quinin according to the above rule. When a large dose is given at one time about half of it is promptly eliminated, leaving only the other half to combat the parasites. A much smaller proportion is eliminated early, he says, when given in fractioned doses.

Policlinico, Rome

September, XVI, Surgical Section, No. 9, pp. 381-428

132 Radical Treatment of Chronic Laryngeal Stenosis. (Considerazioni e contributi per la cura radicale delle stenosi croniche laringee.) T. Della Vedova.
133 Three Cases of Osteocarcinoma of Traumatic Origin. G. Gallina.
134 *Treatment of Leg Ulcers by Circular Incision Above the Ulcer. (Cura delle ulcere varicose col metodo della sezione cutanea circolare della gamba alla Mariani.) S. V. Crainz.

134. **Treatment of Leg Ulcers by Circular Incision Above.**—Crainz here reports the application of this method in 14 cases before 1908 with the ultimate outcome. In 3 cases the operation was bilateral and in 6 cases the saphenous vein was also resected. There does not seem to be any danger of thrombosis with the circular incision technic, and all of the 11 patients with the simple incision have been entirely cured to date with one exception, in which there was only improvement. There was also one failure in the 6 cases in which this technic was supplemented by resection of the vein trunk. He regards these results as a brilliant success, particularly as the ulceration in many of the cases had been of several years' standing, the lesions were extensive and deep and the patients were working people, compelled to use the leg constantly. Even in the 2 cases reported as failures, although the ulcer still persists, it has been reduced to an insignificant lesion almost entirely free from discharge. The circular incision through the skin and subcutaneous tissue encircles the leg just below the head of the peroneus.

Riforma Medica, Naples

September, 6, XXV, No. 36, pp. 981-1008

135 *Diagnosis of Pseudoascites from Rupture of Ovarian Cysts. A. Ott.
136 Periappendiceal Inflammatory Swelling Simulating Neoplasm. (Tumore infiammatorio pseudo-neoplastico peri-appendicolare.) F. Gangitano. Commenced in No. 35.

135. **Differentiation of Pseudoascites from Rupture of Ovarian Cyst.**—Ott describes a case which emphasizes anew the importance of cooperation between the internist and the surgeon for interpretation of phenomena observed even when they are assumed to pertain exclusively to the domain of internal medicine. In a woman of 47 with supposed ascites after three years of vague lumbar pains, constipation, irregular menstruation and gradual increase in size of the abdomen, the discovery of a tumor in the right flank gave the clew to the diagnosis, especially as exploratory puncture brought a mucous rather than an ascitic fluid. At the laparotomy the abdomen was found filled with small cubes of a jelly-like substance and multiple cysts were found in the ovaries and invading the peritoneum. When the cyst ruptures insidiously and the contents escape gradually into the peritoneal cavity, as in this case, there may be no symptoms to call attention to the rupture, and the fluid obtained by puncture may not be characteristic either of a cyst or of ascites. However, if the fluid obtained by puncture contains an unusually large proportion of granulated corpuscles, a cystic origin is probable. When the rupture occurs suddenly, the symptoms generally differentiate the disturbance at once.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

A BOOK OF QUATRAINS, Original and Translated. By Frederic Rowland Marvin. Cloth. Pp. 101. Price, $1. Boston: Sherman, French & Co., 1909.

AUSTRALASIAN MEDICAL CONGRESS. TRANSACTIONS OF THE EIGHTH SESSION, Held in Melbourne, Victoria, October, 1908. Vols. I, II, and III. Paper.

DOCTOR RAST. By James Oppenheim, Author of "Monday Morning and Other Poems." Cloth. Pp. 321. Price, $1.50. New York: Sturgis & Walton Co., 1909.

A TEXT-BOOK OF OBSTETRICS. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. Sixth Edition. Cloth. Pp. 953, with 847 illustrations. Price, $5. Philadelphia: W. B. Saunders Co., 1909.

THE PRINCIPLES OF HYGIENE. By D. H. Bergey, A.M., M.D., Assistant Professor of Bacteriology, University of Pennsylvania. Third Edition. Cloth. Pp. 542, with illustrations. Price, $3. Philadelphia: W. B. Saunders Co., 1909.

SURGICAL DIAGNOSIS. By Edward Martin, M.D., Professor of Clinical Surgery in the University of Pennsylvania. Cloth. Pp. 737, with 445 engravings and 18 plates in colors and monochrome. Price, $5.50. Philadelphia: Lea & Febiger, 1909.

MODERN MATERIA MEDICA AND THERAPEUTICS. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine, Woman's Medical College of Pennsylvania. Fifth Edition. Cloth. Pp. 646. Price, $3.50. Philadelphia: W. B. Saunders Co., 1909.

AN INTRODUCTION TO CHEMICAL ANALYSIS for Students of Medicine, Pharmacy and Dentistry. By Elbert W. Rockwood, M.D., Ph.D., Professor of Chemistry and Toxicology and Head of Department of Chemistry in the University of Iowa. Cloth. Third Edition. Pp. 241, with 20 illustrations. Price, $1.50. Philadelphia: P. Blakiston's Son & Co., 1909.